THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
The Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · THE RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · THE RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY
AT
33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE, PARL., LONDON"
Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free
British Isles and Abroad.....£2 5s. 0d.
Single Copies.....One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 67. NO. 27 FRIDAY, DECEMBER 31, 1937

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Possibilities of Railway Nationalisation

THE passing of the Railways Act, 1921, which resulted in the grouping of some 120 separate railway companies into the present four main-line undertakings, was held by many to be but an intermediate step in a process of railway nationalisation in this country, for unquestionably grouping has made such a possibility easier. Some of the considerations are set out in both the preface and text of the brochure entitled "Railways and the State," by Mr. Ernest Short, which we review on page 1244. An interesting statement on the same subject is included by Mr. William Whitelaw, Chairman of the L.N.E.R., in an article which he contributes to *The Glasgow Herald Trade Review*. He points out that the control of the railway industry by the State has now reached a point at which accuracy can barely designate it as a private undertaking. Wages are controlled by a tribunal and rates and fares by another, both set up by Parliament, and in a score of other ways railways have to toe the line. In his view, the State ownership of the railways and their management by a Transport Board would probably leave the railway industry with less Governmental interference than is at present experienced. Nationalisation, he points out, was once little more than a parrot cry of the Labour Party and anathema to a Conservative. Today a Government mainly supported by the Conservative Party has introduced a Bill for the purchase of the coal which lies—or is supposed to lie—under the surface of the land at a value fixed by arbitration and to force amalgamation among colliery companies. "With this example," he says, "who will confidently assert that ere long we shall not see a Bill to purchase the railways . . . at a valuation to be fixed by arbitration, and their management, and perhaps that of all road transport as well, handed over to a Transport Board? Provided the terms are fair, I doubt if railway stockholders will set up any opposition to State purchase of their property, and, if the stockholders can be satisfied, there is no quarter from which any railway opposition can arise." Subsequently, the *News Chronicle* published a report of an interview with Mr. Whitelaw, in which he elaborated his views, and declared himself in favour of State ownership as he had no doubt that this would result in rationalisation and improvement which would reduce the costs of both passenger and industrial transport. Moreover, he is reported to have said: "There should be no compensation for the present directors of the railways, including myself, who would not be required in that capacity. The day has gone by when directors of companies should receive payment in this manner."

* * * *

Mr. Whitelaw on the Outlook

In addition to the articles referred to in our previous editorial note, Mr. Whitelaw has contributed various statements to end-of-the-year reviews. In the *News Chronicle*, for example, he is quoted as calling attention to the fact that much of the extension and improvement of the present railway systems is being carried out with money which has been advanced by the Government. "This money," he adds, "is in course of being spent on schemes for which the railways alone could not have paid." In *The Sunday Times* he takes the matter further by saying that there will be no decrease in the expenditure of the railways, just entering as they are, on large schemes for improvements and extensions of railway and dock works and electrifications of suburban lines out of funds provided by the Government in one form or another. These works have only recently been started; much preparation was necessary; and in some cases reasonable contracts for their execution have not been obtainable. As he observes, this means spreading the work over a longer period than was at first expected, and perhaps the abandonment of one or two of the less important proposals, but the schemes generally will be carried out and the money spent, so that 1938 will certainly see a larger expenditure of this nature than has been incurred in 1937. Mr. Whitelaw takes a confident view of trade prospects for next year.

* * * *

Two Weeks' Traffics

The combined results of the 50th and 51st weeks shown in the table below include Christmas day on all companies, and the Sunday as well except on the L.N.E.R. Compared with the corresponding period of last year, passenger traffics are up by £161,000, merchandise receipts by £193,000 and coal class receipts by £215,000. The combined total increase for the 51 weeks is now £7,185,000.

	50th and 51st Weeks				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec	
	£	£	£	£	£	%
L.M.S.R. ..	+ 63,000	+104,000	+ 95,000	+262,000	+ 2,807,000	+ 4·59
L.N.E.R. ..	+ 44,000	+ 33,000	+ 64,000	+141,000	+ 2,282,000	+ 5·02
G.W.R. ..	+ 24,000	+ 42,000	+ 42,000	+108,000	+ 1,358,000	+ 5 29
S.R.	+ 30,000	+ 14,000	+ 14,000	+ 58,000	+ 738,000	+ 3·59

London Transport receipts for the two weeks (before pooling with the main-line railways) amounted to £1,149,900, an increase of £10,600.

* * * *

Mr. William Bishop

Mr. William Bishop, whose retirement from the position of Chief Solicitor, Southern Railway Company, is recorded on page 1263 this week, has more than passed his jubilee in railway work. Out of the 53 years since he

joined Mr. Charles Mason, Solicitor to the former London & North Western Railway, as an Assistant Solicitor, Mr. Bishop has spent 34 in association with his present company and its constituent, the London & South Western Railway. His connection with the L.N.W.R. dated from 1884 to 1903, when he left to become Assistant Solicitor to the L.S.W.R., and became Solicitor to that railway in 1910. On the amalgamation of the Southern Group of Railways forming the Southern Railway he was appointed Chief Solicitor of that undertaking in January, 1923, which position he continued to occupy until his retirement. Not only will Mr. Bishop's services be missed, but also the prominent part he took in the social life of the company. He was frequently to be seen at railway gatherings, where he was always a welcome guest. All who had business dealings with him will remember with gratitude his invariable approachability. Mr. Bishop's experience as Solicitor to a great railway company was very varied and thorough. Even in his early days on the L.N.W.R. he had much to do in connection with the settlement of the rates and charges, and was present throughout the protracted inquiries in 1891-93 held before the Board of Trade and the Joint Committee of Lords and Commons on the several Railway and Canal Rates and Charges Order Confirmation Bills.

* * * *

Overseas Railway Traffics

In the two weeks under review the Buenos Ayres Great Southern Railway has gained £466,898 on the aggregate, but the Buenos Ayres Western is showing a smaller increase on the year owing to a setback of £9,553 in the twenty-fifth week and a further recession of £3,598 in the twenty-sixth. Central Argentine traffics in the two weeks show a combined decrease of £50,891, although there was a recovery on the comparison with the preceding year of £3,792 in the twenty-sixth week.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
		£	£	£	£
Buenos Ayres & Pacific ...	26th	88,834	— 11,352	2,051,615	+ 30,977
Buenos Ayres Great Southern ...	26th	149,007	+ 1,426	3,238,821	+ 234,162
Buenos Ayres Western	26th	44,355	— 13,151	1,181,887	+ 74,488
Central Argentine	26th	132,115	— 23,549	3,296,492	+ 336,910
Canadian Pacific	51th	564,000	— 24,600	28,245,400	+ 1,287,200
Bombay, Baroda & Central India	38th	253,050	— 25,275	6,260,175	+ 296,025

Canadian Pacific traffics have fallen by £25,600 in the two weeks.

* * * *

Estimating the Holiday Rush

We made brief reference in our review of railway Christmas traffic arrangements on December 17, to the L.N.E.R. plan of having representatives on board certain night expresses who canvassed passengers for their probable dates of return. The company thus had guidance in making arrangements for the homeward rush after Christmas. Some misgiving may have been felt by those charged with making the inquiries as to the disposition of the British traveller (particularly when somnolent in a night express) to be a little reserved in answering questions about his movements. Therefore disarming leaflets were distributed throughout the trains, assuring him that by forecasting the date of his homeward journey he in no way forfeited his privileges as a holder of a cheap night travel ticket should he subsequently alter his plans. In this manner the way was paved to an harmonious personal relationship between members of the public and the company; and no loophole was left for questions in Parliament viewing with grave concern the presence of *agents provocateurs* on British railways. The trains on which the plan was launched were the night services from Marylebone to the North-East Coast.

Mr. Arthur R. Cooper

Probably no one man has been more closely identified with the growth of any system of underground railways than Mr. Arthur R. Cooper who retires today from the position of Chief Engineer to the London Passenger Transport Board. From the time he joined the engineering staff of the Central London Railway—the old Twopenny Tube—in 1901, just after its opening, till now, the progress of development has been continuous. A measure of this development is the expenditure of some £100,000,000 in the period of Mr. Cooper's 37 years service with the Underground, during which he has been responsible for the building of new lines, both in tunnel and in the open; the widening and modernisation of old lines; the reconstruction of stations—including such intricate works as the new Leicester Square station and that at Aldgate East now in hand; the installation of escalators; the improvement of tube ventilation; and the equipment of the lines with up-to-date automatic and power signalling. In addition to his railway work, Mr. Cooper was responsible also for the buildings of the associated bus and tramway services. Mr. Cooper was also an energetic President of the Permanent Way Institution for two consecutive years, during the second of which it celebrated its jubilee. There cannot be many men who will have a more notable monument to their life's work than London's Underground is to its retiring Chief Engineer.

* * * *

The Mexican Railway Meeting

The speech of the Chairman, Mr. Vincent W. Yorke, at the meeting of the Mexican Railway Company last week (see page 1274), portrayed the now familiar situation of a transport undertaking handling increasing traffic, but unable to profit from it by reason of high expenses. Expenditure is already reduced to a level which makes insufficiency of rolling stock a problem at times; and should traffics decline as a result of the depression in the U.S.A. the only practicable means of further reduction would be large-scale dismissal of staff. To do so, however, entails under the provisions of the Labour Law an indemnity of three months' wages to every man dismissed, which the Chairman said would be quite beyond the company's financial capacity to meet. Mr. Yorke warned the shareholders that such a situation might have to be faced at any time. While Mexico is now enjoying complete tranquility, the cost of living is rising and bringing demands for increased wages. About £16,700 a year has already been added to the company's wage bill by an increase recently granted to the lowest-paid members of the staff.

* * * *

A Southern New Year Enterprise

There need be no searching for a suitable New Year resolution among members of the Southern Railway traffic staff. The company has furnished one ready-made—to contribute their best to the success of the Southern Sales League scheme which is launched tomorrow. In our issues of December 17 and 24 we have already outlined the league competitive principle, and the goal of a £250,000 increase in passenger and goods revenue during the year. The Southern Sales League owes its inception to Mr. E. J. Missenden, the Traffic Manager, who in company with Mr. C. Grasemann (Public Relations and Advertising Officer) and Mr. W. J. Shorter (Assistant to the Traffic Manager for Development and Statistics) made a preliminary tour of suitable centres in the various divisions to explain and discuss the scheme. These dis-

cussions took place at Maidstone, Brighton, Woking, and Salisbury. Headquarters organisation of the Sales League will be in the hands of Mr. Shorter, who, it will be remembered, was appointed to his present position in September of this year. A substantial contribution to the success of its working will doubtless be made by the new monthly organ of the league, *Southern Sales*, which by acting as a medium for circulating hints on selling travel will place the successful experience and achievements of individuals at the disposal of all. No doubt the Southern Sales League will be as successful as the L.M.S. Quota Scheme introduced some years ago by Mr. Ashton Davies.

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German Private Railways Taken Over

Tomorrow, January 1, has now been officially announced as the date on which the Lübeck-Büchen Railway and the Brunswick District Railway will be taken over by the German State and their systems become merged into that of the Reichsbahn. This date, the one generally expected, was forecast in our issue of December 3 when we announced the impending transfer, which is taking place under existing legislative powers. A two-thirds majority vote of the shareholders is necessary, but this presents no difficulty since 86 per cent. of the share capital of the Lübeck-Büchen Railway and 76 per cent. of the shares of the Brunswick Company are already held by the Reich. In an official statement, made by the German Ministry of Communications to the press, it was intimated that the transfer of the two undertakings to the Reichsbahn had been purposely delayed in order to avoid their systems becoming involved in Reparation payments, and this explains why the incorporation of the Lübeck-Büchen Railway in the Reichsbahn system, which has long been regarded as a necessity, has not taken place until now. It is emphasised that the acquisition of these companies does not mean that similar measures are contemplated in the case of the large number of small private railway companies existing throughout Germany. Earlier this year, Herr Staatsrat Kleinmann gave an assurance that " the taking over of railways not at present controlled by the Reichsbahn would in general take place only if specific aims were thereby to be served, or if considered desirable by the Reichsbahn for reasons of technical efficiency."

* * * *

Improving Permanent Way Foundations

Prompted by the article in our issue of December 3 describing the re-making of the Southern Railway track formation near Hildenborough, an American correspondent suggests that the use of concrete for improving permanent way roadbed is likely to increase and mentions certain successful applications in America. After more than eleven years of service, the all-concrete type of track on the Pere Marquette Railway (described in *The Railway Engineer* for February, 1932) is still in perfect condition, as well as a second and similar installation on the same railway, but in which a continuous ⅞-in. timber plank was laid between the rail and the concrete. This refinement has overcome the only drawback of the former, namely, the somewhat abnormal joint batter due to inadequate cushioning. Our correspondent mentions also the concrete bridge decks evolved by the Canadian National Railways with so much success that their use is being considerably extended. We described this type of bridge deck in *The Railway Engineer* of September, 1934. In the States success has attended the use of sub-ballast concrete slabs placed below the existing track over soft formations, and concrete-embedded sleepers in tunnel floors and other places where maintenance is normally difficult.

A.T.C. in England

The safety of railway travel in Great Britain is a testimony to the extraordinarily high standard of watchfulness maintained by enginemen, a standard by reference to which the general lack of observation of the average man is in marked contrast. Nevertheless there have been rare occasions on which even enginemen have for one reason or another failed to observe the message of signals, with disastrous results. The device known as automatic train control has for its purpose the amplification of the visual signal by an oral one in the engine cab, coupled with the automatic application of the brakes in case the signal should indicate caution. There are variations and elaborations of this principle, as for example in Germany where not only the cautionary but the stop signals are equipped. In England the Great Western Railway has installed the system at its distant signals throughout most of its main lines, and, as we record on another page, expects to have them all equipped early next year. The early extension of A.T.C., either of the Great Western, or an inductive type, to other lines has recently been forecast.

* * * *

New Signalling at Howrah

On page 1251 we publish an illustrated article on the new all-electric power signalling installation at the important terminus of Howrah, Calcutta, East Indian Railway, an excellent example of how the latest methods for efficient handling of traffic are being applied overseas. It is of interest that power signalling has been in use at this station for some 30 years, originally with electro-pneumatic equipment. Opportunity has been taken, alterations being required in the general layout to meet changed traffic conditions, to concentrate the working in one signal box, in accordance with the present tendency to centralise control of traffic movements, and has been much facilitated by the developments of the last few years in power signalling. It was natural that stations in the colonies and dominions should in due course be provided with apparatus which had proved so serviceable at home, and the desirability of placing the working of them in a few particularly competent hands provides an incentive to the further adoption of power signalling in the Indian Empire, where there are already several notable installations in service with most satisfactory results.

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The Editor's Christmas

There are gloomy moments when it seems to the Editor that his mailbag is made up largely of letters from those who wish to upbraid him. The world, in fact, would appear to be stuffed full of better journalists than he, whom chance has diverted to other callings. Why, then, does he not vacate his place to those who seem ready to fill it gratuitously, and confine his future association with letters to some such lucrative occupation of unquestioned public utility as the conduct of a newsagent's and tobacconist's shop? It is because he is waiting for Christmas. The journalist's Christmas brings him a volume of good wishes that counteracts his earlier despair. Its extent in our own case may be judged from the list of Christmas cards, calendars, and diaries, which we publish on page 1265. These tokens come not only from those with whom we make contact editorially, but from that otherwise austere company whose province is the uncharted territory preceding these editorial notes, and following " The Railway Share Market." In reciprocating heartily the good wishes of all, we declare our resolve to struggle continually towards that standard of omniscience and infallibility which is so confidingly expected of us.

Us in 1887

IN the last few days of a year many people spend a certain amount of time taking stock—profitably or unprofitably—of the events of the past twelve months. In our case whenever we consider a subject it is usually with a view to publishing some thoughts or comments, and this was a task to which we could not bring ourselves at the moment, for the events of the past year throughout the world have been too complex for their tendencies to be extracted lightly. Having occasion the other day, however, to consult the files for 1887 of our constituent paper *The Railway News*, we were impressed with the close parallel in certain respects and sharp contrasts in other respects between the situation then and now, a period of exactly fifty years. For example, any reviewer of 1937 might easily make use of the following survey written by our predecessors in 1887: "The year . . . passed away amid much doubt and uncertainty in regard to the outlook of foreign politics. . . . As the year wore on to its close, war appeared to be certain, and only the minor point remained to be settled—when was it to commence? The trading and monetary interests suffered more or less from the discouraging aspect of the political future, but towards the close of the year the trade and industry of the country showed their power to rise superior to all the difficulties which the personal ambitions of aggressive rulers and statesmen might set up against national progress. The new year brings its hopes as well as its fears. In spite of all gloomy forebodings, in the face of vast national armaments, moving forward as in preparation for the great conflict, hope, almost amounting to a belief, prevails that peace will yet be preserved, and that the prosperity which was born of the last few months of 1887 will grow and expand to large dimensions in 1888."

Both 1887 and the year just drawing to its close have in common the exceptional traffic occasioned by national celebration, in one case the Jubilee of Queen Victoria's accession, and in the other, the Coronation of our present King. Here the similarity ends however, for whereas the railways were called upon during the last year to carry unprecedented passenger traffics, the Jubilee traffic of 1887 was not so satisfactory for most of the railway companies as had been expected. Many people in the country did not come up for the Jubilee proceedings, while, on the other hand, many Londoners who would otherwise have started for their holidays remained in town. Actually on all the railways of the United Kingdom, the increase in the passenger traffic for the week in June which included Jubilee Day was only £21,000, but the position was improved as the result of exhibitions in the provinces to mark the event. A peculiarity of passenger traffic in the neighbourhood of London was that 1887 showed decreases in comparison with the previous year, mainly through the closing of the Indo-Colonial Exhibition at South Kensington, which drew vast crowds at excursion fares, although "Buffalo Bill" helped to some extent to fill the gap. In 1937, of course, the local railways in London handled not only their normal share of the increase occasioned by the Coronation, but were also required to make good the absence of motorbuses from London streets during practically the whole of May.

A reminder that the railway system in the British Isles was still growing fifty years ago is provided by some statistics issued in October, 1887, which showed that in the preceding ten years the total mileage had increased nearly fifteen per cent. (from 16,872 in 1876 to 19,332 in 1886). Naturally construction overseas was even more marked fifty years ago, and in referring to the Russian Railway Jubilee we commented on the enormous impetus towards railway construction given by the Crimean War, and observed that many of the Russian lines were purely of military importance. Mention of the Russian Railway Jubilee recalls the fact that naturally many of the centenaries which have been celebrated during the present year had their counterparts in jubilees in 1887. For example, the jubilee of telegraphy was celebrated in July, 1887, by a dinner at the Holborn Restaurant over which Mr. H. C. Raikes, then Postmaster General, presided, and referred in eulogistic terms to the work by Cooke and Wheatstone.

Regarding British possessions overseas, the issue of *The Railway News* for September 24, 1887, referred to an important step taken in the plans to open up Burma by means of railways. In marked contrast with the lack of activity previously shown, we recorded that, without waiting for the completion of the railway to Mandalay, the Chief Commissioner had chosen the route for a line beyond to Bhamo and Mogoung and had asked permission of the Government of India to have it surveyed. Even then it was hoped to link Burma and India by railway. During the intervening half century many surveys have been undertaken to this end along the three possible main routes, but the link has never been completed and is scarcely within the bounds of practical politics at the present time. Moreover Burma, which fifty years ago was in course of being opened up, has now during the past few months attained full independent status, and this severance from India—which included its railways—together with the potentialities of air transport make the Indo-Burma railway link now seem even more distant than it did to our predecessors in 1887.

It is surprising to find that even half a century ago there were already some lines which had finished their period of usefulness and were dismantled and disposed of at knock-down prices. In November, 1887, we mentioned a local railway in France (Haironville to Friancourt) which was advertised for sale at £40 the lot of 61 kilometres in full working order, but failed to find a purchaser. The present popularity of the light railcar, which in certain parts of the world makes intermediate request stops away from stations, had its counterpart in 1887 when the French Minister of Public Works authorised the Western Railway of France to run so-called light trains upon several lines. These trains were limited to six vehicles, the working was entrusted to selected employees, and travellers without luggage were permitted to alight at certain fixed spots between stations. Fifty years ago the Channel Tunnel was very much in the public eye but *The Railway News* spoke scornfully of its prospects and said that the passage across the Channel had been reduced in time, and the discomforts had dwindled almost to vanishing point. The *trains de luxe* running between London and the Riviera in connection with the splendid service of the Chatham Company's steamers were cited as an example of the extent to which comfort and luxury could be combined in association with the railway service, and were held to show how ridiculously small must be the advantages which even the most sanguine promoters of the Channel Tunnel could claim from that colossal undertaking. Without necessarily endorsing the views of our predecessors, there is no doubt that half a century has failed to prove them wrong. It may be added that the Chatham Company had put into service the new steamer *Empress*. Although the inauguration of the Dover—Dunkerque train ferry belongs properly to 1936, the present year is the first complete period of twelve months in which this further effort to improve the Channel crossing re-echoes the efforts of the railway authorities of 1887.

At home, also, passenger comfort and safety were prime considerations in 1887. On November 1 of that year,

the Great Northern Railway began to carry third class passengers in the Flying Scotsman—an important step in the popularisation of railway travel—and now the present month has seen the announcement that the L.N.E.R. is providing second class accommodation on its London suburban trains for the last time today. With the exception of the serious accident at Doncaster in September, 1887, the railway traffic of that year was carried on with wonderful freedom from injury and loss of life to passengers—a characteristic which happily now as then attaches to the ordinary working of our railway system. Lest we should be accused of closing on a sad note we may add concerning the Doncaster accident that it provided a striking example of the cordial arrangements existing between railway officials and their employees, for the servants of the Sheffield Company offered a week's wages towards the loss which the company would have to bear in connection with the accident.

* * * *

Goods Transport Misconceptions

THE other week Mr. George Morton, Chief Accountant of the L.M.S.R., gave a short talk to the Harrow Rotary Club dealing mainly with "some statistics of a great railway company" the substance of which we reproduce in a news article on page 1271. In introducing his subject, however, he took the opportunity to make authoritative statements on one or two points which are widely misunderstood by traders. These took the form of replies to specific questions put by the Secretary of the club. The first question was "whether it were true that Woolworth's had forced new charging methods upon the whole railway system" and Mr. Morton replied that he was glad the name of that firm had been mentioned because it afforded him the opportunity of giving some idea of the correct version of the transport arrangements between the railway companies of Great Britain and that famous firm of multiple shops. He said he was personally involved in the Woolworth arrangements a few years ago when the firm put forward a suggestion for a simplified method of calculating its carriage charges, and it showed the great desire of the present-day railway managements to meet traders' legitimate requirements that the railways did in fact, after investigation, agree to accept from Woolworth's an agreed percentage of the total turnover, calculated in bulk to represent the transport charges instead of calculating each invoice separately. Obviously this represented a considerable advantage to both sides in the matter of clerical and detailed labour. So bold were the railway companies in taking this up-to-date step, in conjunction with Woolworth's, that they were faced with the probability of breaking the law as it stood, and it was necessary for them to take the earliest possible steps to bring themselves right legally by securing new legislation which, in short, was the law relating to Agreed Charges.

Another point raised was "whether it was true that the average speed of goods traffic was 4 miles an hour." To this Mr. Morton said that the figure apparently related to train miles per *engine* hour which was not a measure of train speeds, as it included the considerable time spent on shunting and other unproductive mileage. The true measure of train speed was the train miles per *train* hour, and here the average figure of the L.M.S.R. for 1936 was more than twice that quoted, being 8·43 miles an hour. When considering this average figure regard must be had to the fact that it included all the slow-moving coal trains, and also the various pick-up and set-down trains stopping many times on their journey. "Actually," added Mr. Morton, "we have a large number (332) of freight trains running every day at an average speed of 40 to 44 miles an hour, between such places as London, Manchester, Birmingham, Glasgow, and Liverpool, many of our vehicles being specially fitted, as regards brake power, in order to permit of these high speeds for very heavy freight trains." Mr. Morton emphasised the danger of drawing wrong conclusions from statistics, and added that he could furnish *average* statistics, properly compiled, in respect of the loading of three classes of traffic, which showed an increase in loading in respect of each class, but the total of the three was, in fact, a decrease!

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Great Southern Railways Tariff Increase

IN our issue of December 10, page 1039, we reported the decision of the Railway Tribunal, sitting in Dublin on November 16, 17, and 18, to order the increase applied for by the Great Southern Railways (Ireland) of 5 per cent. on all rates and fares; and on December 24 we published a detailed account of the evidence heard by the tribunal. The text of the judgment is now available, and may conveniently be summarised as follows. The judgment itself is dated December 3 and is signed by the Chairman of the Railway Tribunal, Judge O'Brien. On this occasion of the fourth review of the standard charges and exceptional charges of the Great Southern Railways Company, held under the Railways Act, 1924, two claims had been made, namely, (1) for an allowance to remunerate adequately additional capital amounting to £101,103; and (2) for an increase of 5 per cent. or thereabouts on all charges, standard or exceptional. The company had lodged, in support of its claims, its published accounts for the year 1936, together with several statements, all of which were verified by the evidence of the witnesses called during the review. The Minister for Industry and Commerce had submitted the observations of his department on the claims preferred, on November 11, 1937. Only two objections had been presented at the public hearing and these were disallowed as not within the purview of the Act.

The Court, in its judgment, first deals with the claim of the company for an allowance in respect of additional capital expenditure, and finds that this claim is reasonable and that an adequate remuneration should be provided for out of revenue amounting at 4 per cent. to £4,044. As regards the rates and fares, the review was made on the experience of the operation of the standard charges and exceptional charges during the three years 1934, 1935, and 1936, and in connection therewith the Court examined and considered the financial statements furnished by the company and the observations of the Minister, as well as the evidence of the Company and the parties who appeared. The Court finds that the standard revenue for the three years mentioned was £561,189, the average annual net revenue £472,083, and the deficiency £89,106. It is found, therefore, that there is a deficiency within the meaning of Section 54 (4) of the Act. The witnesses for the company established to the satisfaction of the Court (and indeed, the judgment says, there was no suggestion to the contrary), that the deficiency was not due to lack of efficiency or economy in the management, and that not only was the deficiency likely to continue, but it might even become greater. Having regard to the evidence given as to the already increased and rising costs of operation, the Court was "not of opinion that owing to change of circumstances the deficiency of the company is not likely to continue."

Based on statements furnished and evidence heard, the Court was able to set out figures showing the results of working the railway in the year 1936, compared with the estimated results in a hypothetical year *B* (meaning the year following this review), in which the figures reflect

the application to charges of the modifications sought by the company as well as the increased costs of operation expected. The table so constituted is reproduced in the judgment as follows:—

	1936	*B* year	*B* year increase or decrease on 1936
	£	£	£
Passengers	851,698	877,248	+ 25,550
Parcels, &c.	235,533	245,481	+ 9,948
Goods	1,630,720	1,700,344	+ 69,624
Livestock	312,563	321,940	+ 9,377
	3,030,514	3,145,013	+ 114,499
Working expenses	2,857,333	3,018,450	+ 161,217
	173,281	126,563	— 46,718
Revenue from other sources	286,603	326,280	+ 39,677
Net revenue	459,884	452,843	— 7,041
Standard revenue	561,189	561,189	—
Deficiency	101,305	108,346	— 7,041

There are footnotes to this statement to the effect that the estimated revenue from other sources for *B* year is that adjusted by the Court in respect of the amount of receipts included therein for road transport, and also that the amount of standard revenue does not include the allowance of £4,044 for remuneration of additional capital raised.

From the established facts it is evident that the deficiency of *B* year will much exceed the average deficiency of the previous periods, and the tribunal holds that the construction of the words "as it may think necessary to enable the company to earn its standard revenue" in Section 54 (4) of the Act becomes important, in that they empower the Railway Tribunal to make modifications to enable the company (a) to increase its net revenue but not necessarily to the full amount of its standard revenue; or (b) to offset or partly offset a reduction in its net revenue. The testimony of witnesses called for the company was that the general increase of 5 per cent. applied to all traffic as asked for by the company was a very modest one, so modest that it would not affect industry or production; that it would bring the company nearer to its standard revenue, and that its effect would be an increase of 3·77 per cent. in receipts, some slight loss being foreseen due in part and possibly only temporarily to diversion. Having considered all relevant documents and matters, and having examined witnesses and made the review directed by the Act, and having heard all parties interested, the Court gives effect to the conclusions reached and approves the modifications applied for by the company and contained in the appendices annexed to the judgment.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Free Wheels for Railway Vehicles

D. Wickham & Co. Ltd.
Ware, Herts. December 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I notice in the issue of THE RAILWAY GAZETTE dated December 10 that the point has been raised as to the advantages of fitting railway vehicles with fixed axles and free running wheels. I believe this idea was tried out many years ago on some of the French railways, but abandoned, presumably owing to the difficulty of lubrication and consequent rapid wear.

As your correspondent points out, the availability of suitable anti-friction bearings eliminates this objection, and it may interest you to hear that for the past seven years, the firm with which the writer is connected has used fixed axles with free running wheels on a large number of small inspection cars and gang trolleys; this type of axle is also in service on 52-seat passenger railcars of light construction, and is giving excellent results. In all these cases, however, the axle loading is comparatively light and the initial cost reasonable, and it is possibly this initial cost that has so far prevented the adoption of free wheels on standard rolling stock.

Yours faithfully,

A. H. SOMMER
Director (Works)

Local Services on Main Lines

23, Liscombe Road, Dunstable
December 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The accelerations of long-distance services which have taken place and are taking place on British railways, though highly satisfactory in themselves, are in some cases being achieved at the price of disastrous effects upon local services. Not only do the improved express services make it impossible to find paths for any additional local trains on certain main lines, but sometimes it is even necessary for the existing timetables to be seriously impaired. In connection with the recent accelerations on the St. Pancras main line of the L.M.S.R., a local train which used to leave Bedford for Luton at 4.48 p.m. on weekdays has been discontinued and there is now no stopping train between 1.45 and 5.32. The 4.48 was used by schoolchildren living at places as far south along the line as Harlington and attending school at Bedford; and judging by the volume of complaints many other people must have been in the habit of using it. The significant fact is the reply the railway company is reported to have given to representations made by the County Council, to the effect that the alterations have been made in connection with the general acceleration of main line services, and, although regretted, are unavoidable.

Although it has been found possible over a considerable stretch of the London-Portsmouth main line to run frequent express and stopping services on the ordinary double track, this is partly due to the better acceleration of electric stopping trains and partly due to the fact that the Portsmouth expresses are the only ones involved. On a steam main line to the North, with expresses to many different destinations all requiring a service at about the same time, it has become impossible on portions with only a double track to keep both the local and the long-distance services abreast of modern requirements. A solution must be found to this problem, but in recent years the companies have in many cases shown a deplorable tendency to follow the easiest way—to allow more and more short-distance traffic to go by road whilst concentrating their attention upon the improvement of long-distance services. It is extremely doubtful whether this policy is in the interest of the companies themselves, since a large proportion of the traffic lost to the road is carried in private vehicles or in those of independent transport companies, not in those of railway-associated operators. It is certainly not in the public interest, for two reasons. In the first place, every increase of road traffic adds to the terrible story of injuries and fatalities, the number of which must eventually be diminished but can never be brought down to the railway standard because of the much greater human element in road driving. Secondly, in the event of a national crisis of such a nature as to make efficient, safe and economical transport vital, a railway system in which only long-distance facilities had kept pace with the times would lack sufficient staff, motive power, rolling stock, tracks and station facilities to supply the country's needs.

The huge volume of propaganda aimed at the increase of road mileage constitutes a tremendous waste of energy, for the roads are rather more than enough in quantity for the traffic which would still use them if the railways were brought up to date, although there is of course considerable room for improvement in the quality of the roads in general and the methods of utilising town streets in particular. A far more urgent transport necessity at the present time is the provision of extra tracks along every railway route where the present operating conditions make it impossible to provide adequate services. For economic reasons, the railway companies cannot do this without financial assistance, and sooner or later that assistance must be forthcoming. The Government exercises far more control over the railways to ensure that they are used in the public interest and with due regard to safety, than it does over the roads. There is no reason, therefore, why the fact that railway companies are legally the owners of the track they use whilst road transport operators use a track owned by the community at large should prevent the use of public money to ensure that the nation has the improved railway system which it urgently needs.

Yours, &c.,

I. WATKIN

Main Line Electrification

London, E.C.2, December 20

To the Editor of The Railway Gazette

Sir,—I have read with much interest the letter from Mr. Ashley-Brown appearing in your issue of December 17. I venture to hope that during this controversy as to the advantages of steam and electrical traction for suburban services, the important national aspect of concentrating of large power units in buildings, which would be vulnerable to attacks from the air during war and also liable to be put out of action during serious social upheavals, will not be lost sight of. In the steam locomotive, which I think is generally considered one of the most economical power units, we have a reliable prime mover which will prove most useful under above conditions.

Yours faithfully,

A RAILWAY SHAREHOLDER

All-Steel Coaches

51, Drayton Gardens, S.W.10
December 20

To the Editor of The Railway Gazette

Sir,—Without the simultaneous introduction of universal track circuiting and cab signalling, where would be the greater safety, which, it is suggested in the popular newspapers and even in Parliament, would result from the substitution of all-steel coaches for the existing mainly steel passenger rolling stock?

I understand that the passengers occupying the rear coaches of the train from Edinburgh in the recent unfortunate disaster on the L.N.E.R. near Castlecary station were at first quite unaware of the serious nature of the accident and remained seated in their compartments for some time, thinking that, at the very worst, part of the train had become derailed.

It is scarcely too much to assume that their immunity from harm was due to the absorption of the shock by the telescoping of the leading coaches. If all-steel coaches had been used, would not the number of persons injured have been increased by more than the number of people who were killed in this accident?

In any case, can it reasonably be claimed that there is more than an "academic" social justification for an uneconomical expenditure, the sole practical effect of which would be slightly to reduce the chance of a passenger's being involved in a fatal accident on the British railways, when it is already less than 1 in 300,000,000.

I am, Sir,

Yours truly,

P. HENDERSON

Fog Repeater Signals

2, Copthall Buildings, E.C.2, December 10

To the Editor of The Railway Gazette

Sir,—In a letter in The Railway Gazette of December 10, Mr. W. Prescott refers to the frequent dislocation of train services by fog. Admittedly, the railways in the past few years have done a great deal to combat the effects of fog by means of light-signals, &c., and no doubt more could be done if costs were matters of no moment.

It does seem strange, however, that such devices as have been adopted involve far greater costs than others which might appear to be both simpler and cheaper and yet as effective. Of the latter perhaps I might mention one example to which I have not yet seen attention drawn.

I refer to the use of a very simple repeater signal in the form of an ordinary electric light globe, wired in conjunction with the home signal in such a way that it is illuminated only when the signal proper is "off," to be fixed in close proximity to the track at a given distance in advance of the home signal, and at such a height that it passes within 2 ft. of the driver's cab, whence it can scarcely fail to be visible even in the thickest of fogs.

The utility of such a light was made particularly apparent to me one foggy evening last month. I was travelling in the front coach of a S.R. train, when visibility was about 10 yards at the most. Speed was some 30 m.p.h. until a distant signal at the "on" position was passed. (In point of fact this signal was taken "off" just as I espied it from my coach, but too late of course for the driver to become aware of the fact.) In consequence speed was sharply reduced to 5 m.p.h. after which it was more gradually reduced to almost zero whilst the driver "felt" his way towards the home signal. It was not until he was only some 10 yards distant from the home signal that the fog-signalman's green lamp was discerned.

The total time lost was at least four minutes. With circumstances as they were it was unavoidable, but with the use of one or more repeaters of the type I have attempted to describe it would probably not have exceeded one minute. Moreover, the services of the fog-signalman and the use of detonators would be unnecessary; all that would be required would be one man to switch the repeaters into circuit on the approach of fog and to switch off at its departure.

Standard practices would be simple to arrange: *e.g.*, a light 150 yd. in advance of a signal might be a foot above the driver's eye-level, and one 300 yd. in advance a foot below his eye-level. Again the colour of such signals could be blue or some other colour calculated to avoid confusion with the red, amber, or green of the normal signals.

The use of such signals would presumably be of the best service within those sections where the density of traffic is such that the usual distant signal remains "on" on almost as many occasions as it is pulled "off."

Yours faithfully,

CHRISTOPHER L. MORGAN

[Our correspondent's proposal for a luminous signal to act as a preliminary notification of the position of the home signal incorporates the principle of the so-called fog repeater signals, first introduced in England on the Metropolitan Railway and now in extensive use on the L.P.T.B. lines as well as the electrified tracks of the L.M.S.R. from Campbell Road junction to Barking. The originator of the idea appears to have been the German engineering firm of Siemens & Halske, which supplied equipment for both home and distant signals on the Belgian State line between Antwerp and Brussels before the war, where it was found most satisfactory. We agree that something of the sort would be a useful addition to our mechanical signalling, at least in suburban areas, where it would enable much delay to be avoided. The driver of a stopping train ought indeed to be told at the distant signal that he can run with confidence to the platform starting signal, and if this were done Rule 39a could be dispensed with for such trains, and tempers considerably improved, both railway and public, in bad weather. With multiple-aspect signalling, every signal automatically becomes a distant for the next.—Ed. *R.G.*]

PUBLICATIONS RECEIVED

The Civilising Influence of Transport. By George B. Lissenden. London: Arthur H. Stockwell Limited, 29, Ludgate Hill, E.C.4. 7¼ in. × 4¾ in. 32 pp. Paper covers. Price 1s. 0d. net.—The author of this brochure, who is the Traffic Controller for Lever Bros. Ltd., Port Sunlight, sets out to show that transport is one of the greatest boons mankind has ever known. Certainly transport is an essential component of civilisation and if the latter be accepted as a boon, Mr. Lissenden is sure of sympathetic readers. Within the limit of 32 pages he necessarily gives only the barest outline of the development of regular communications between one settlement and another, and he therefore offers a series of glimpses into the condition of transport in different ages. Naturally, the treatment is superficial, but even this makes an interesting story and Mr. Lissenden's brochure may serve as a timely reminder to those who are apt to overlook the fact that in the civilisation of mankind one of the most potent influences was and is transport.

Railways and the State: The Problem of Nationalisation. By Ernest Short. London: The British Railway Stockholders Union, 25, Victoria Street, S.W.1. 9 in. × 6 in. 56 pp. Price 1s. 0d. net.—In the foreword to this brochure Sir Charles Stuart-Williams, Chairman of the British Railway Stockholders Union Limited, says that the Socialist Party has made it clear, from time to time, that when it assumes office, its programme will include important and far-reaching proposals for the nationalisation of many industries and undertakings, among them transport. He sees little doubt that the Labour Party, given an adequate majority in the House of Commons, will be in a position to implement such proposals with no more delay than may be occasioned by the constitution of the necessary machinery, and feels it would be a rash man who denied this possibility for more than, say, another five years. No suggestion is made either in this foreword or in the text of the book itself that any such nationalisation would be framed on other than a basis of fair and reasonable compensation to the existing owners of such undertakings, but from the stockholders' point of view the possibility is none the less important, for naturally every effort would be made in such circumstances to prevent anything like payment of excessive compensation. In fact the last-named phrase may be taken to exclude capitalisation of potentialities and therefore might leave the railway stockholder in the position of being compensated on the basis of the earnings during years which were unsettled and comparatively unprosperous.

It is a truism that any change from the existing order of things is attempted only with the object of improving somebody's position, and Mr. Ernest Short sets out to examine the problem of nationalisation from this viewpoint, namely to see what advantages may be expected and what corresponding dangers may arise. Very wisely he surveys the field of national railways throughout the world and leaves his reader to draw his own conclusion from facts.

The A.B.C. or Alphabetical Railway Guide. London: Thomas Skinner & Co. (Publishers) Ltd., 15, Fetter Lane, Fleet Street, E.C.4. 8¼ in. × 5 in. × 1½ in. 673 pp. + folding map and 240 pp. advertisements. Price 2s. net.—The herculean task imposed on the compilers of the *A.B.C.* by the 5 per cent. increase in railway fares from October 1 has been tackled with such expedition that by the December issue the calculation of some half a million new figures and their correction in the guide has been completed, bringing the *A.B.C.* up to date in this particular. In the compass of some 600 pages the *A.B.C.*, which has now reached its 1,010th issue, gives an alphabetical list of all stations in England and Scotland with the distance from London, the fares from London in the case of all but the most insignificant stations, the supplementary fares for streamline trains or Pullman accommodation, notes as to restaurant and sleeping cars, lists of hotels at the larger towns, and such minor but useful information as early closing days. As to the trains themselves, the information is not on the same scale of completeness. Not more than one-third of the stations in the guide have their train services to and from London given in detail; and all too frequently the intending traveller is told to "see" the trains to or from some important junction in the vicinity, whence he may expect to find a connection "about" so many times daily. On the other hand, space in the guide is wasted in the case of some stations by giving alternative train services that no traveller in full possession of his senses is likely to use. For example, six complete columns are used in giving not only the magnificent electric service between Waterloo and Portsmouth, with its hourly 90-minute trains, but also the steam service to and from Waterloo *via* Eastleigh, varying in duration of journey from 2¾ to 4 hours, and the steam service to and from London Bridge and Victoria by the Brighton route. York, to quote another example, has the complete service to and from St. Pancras shown, with journey times ranging from 4¾ to 9 hours, in addition to the L.N.E.R. service to and from King's Cross, mostly 3¼ to 3¾ hour trains and down to the 2 hr. 37 min. of the Coronation. The *A.B.C.* has come into the hands of proprietors* who are determined to make this old-established publication as useful to the public as they can; and we would suggest that a valuable forward step without increasing the size of the *A.B.C.*, might be to cut out some of the less useful alternative services, and even from the direct tables a number of the trains with many stops which no through traveller is likely to use, and then occupying the space so economised with fuller details of train services to and from many of the minor stations. A comprehensive list of hotels occupies the earlier part of the *A.B.C.*, and some condensed London suburban tables complete the contents. It is, of course, of use only to travellers to and from London.

* See page 300 of THE RAILWAY GAZETTE of August 13, 1937.

Racing Calendar for 1938.—A handy pocket calendar, giving the date of all the principal racing fixtures during 1938, has just been published by the Great Western Railway. Copies will be sent free by the Superintendent of the Line, Paddington station, London, W.2, upon receipt of a halfpenny stamped addressed envelope.

Calendar of Events.—The Travel and Industrial Development Association of Great Britain and Ireland has issued a vest-pocket-size calendar, intended for world-wide circulation, giving details of events of every description forthcoming during 1938 in this country. In addition to 20 pages devoted to this purpose, the calendar contains 26 pages of facts about the various subjects on which the prospective and actual visitor to the British Isles desires information. This calendar has a circulation in 56 countries, the principal of which are the United States, the Dominions, France, Germany, and Spain.

Hauling Jack.—An illustrated brochure from Hadfields Limited, East Hecla and Hecla Works, Sheffield, describes a portable hauling jack, known as the Sylat. This appliance consists of a hand lever for working a sliding pulling block along a rack bar, the jack being anchored meanwhile by means of the chain provided to any suitable support. Illustrations reproduced in the pamphlet show Sylat hauling jacks in use for closing dock gates and for moving electrical machinery into position.

Electric Motors and Control Gear.—An illustrated brochure from the English Electric Co. Ltd., Industrial Motor Works, Bradford, shows typical examples of the firm's electric motors installed for driving machinery at docks and wharves, such as hoppers, conveyors, hoists, and pumps. Ten types of English electric motors are recommended as specially suitable for dock and wharf duties, including machines adequately protected against dust, drippings, and fire. The company also sends us a convenient pocket-size abridged catalogue of a.c. and d.c. motors and control gear; and a separate illustrated booklet describing the deionising method of arc-control as applied to modern oil circuit-breaker design.

THE SCRAP HEAP

A train of 20 carriages is being used as a department store by the Kirov Railway of the U.S.S.R. Intended to serve the railway workers living near the line remote from shopping centres, the train carries a wide assortment of drapery goods, groceries, meat, fruit, vegetables, &c. This store has recently completed its first run of 1,000 km. from Petrozavodsk to Murmansk, stopping at many points *en route*.

* * *

LONDON TRANSPORT'S 150TH ESCALATOR

Either King's Cross or St. Paul's station will have the 150th escalator to be placed in service by London Transport. Keen interest is being taken in the unofficial contest, which will end in February. The board now owns 143 escalators. Their total length is nearly 2½ miles and each one can carry 9,000 standing passengers an hour.

* * *

Three vessels all named *Orion* appeared on December 21 in the ships station list of vessels berthed in the Port of London docks. The simultaneous berthing of two vessels of similar name is not unusual, but the coincidence of three is rare. The three *Orions* and their cargoes typify the international character and diverse trade of the port. The ships were the 24,000-ton British luxury liner in Tilbury docks; a 5,000-ton Greek freighter with grain at Royal Victoria Dock; and a Finnish vessel of 2,400 tons with timber in Surrey Commercial Docks.

* * *

RAILWAYWOMEN IN AUSTRIA

Women are now being admitted to the railway service in Austria. Hitherto they have only been employed in light official work; now a trial will be made of them in other kinds of railway work. A young lady, for the first time in Austria, has been engaged as station-master on a small railway line between Botzen and Meran, in the Southern Tyrol.—*From "The Railway News" of July* 5, 1902.

* * *

The following account of an experiment that did not come off is from the *Ayr Advertiser* of Thursday, December 31, 1840: "A wiseacre who had seen a newspaper paragraph stating that some clever individual had put a fourpenny piece on a railway line, which the engine had flattened out to the size of sixpence, thought he would try the experiment on a larger scale. He therefore spread out a number of fourpenny pieces at one of the crossings of the Glasgow & Ayrshire Railway line, not very far from his home, and, with his head leaning over the wall, anxiously awaited the approach of the train which was to add a third to their value. But the best laid schemes o' mice an' men gang aft agley. Up came the smoky devil with his long tail, and as the rails were waxy with hoar frost, the fourpenny pieces stuck fast all round the wheels, and off sped the train with the treasure, leaving the go-ahead coiner in a state of bewildered disappointment. We understand he proposes selecting fine weather for his next experiment."

* * *

A London ophthalmic surgeon who has been travelling to and fro between the same two stations for 58 years is claimed by the L.M.S.R. authorities to hold the "marathon record" for season ticket travelling. He is Dr. Thomas Phillips, who took up residence at Harrow in 1879 and who has been travelling daily to and from his consulting rooms in the West End ever since. With the exception of a few months shortly after he went to live at Harrow, Dr. Phillips has held a season ticket continuously. Now in his 78th year, Dr. Phillips still travels to town every day. During his 58 years of season ticket travel, Dr. Phillips has never, he says, had cause to complain of any incivility from the railway staff. The L.M.S.R. cannot trace from its records any case of a season ticket holder having set up a "record" of longer duration, although there have been several claimants who have held season tickets for 50 years or slightly over. It is estimated that Dr. Phillips has travelled nearly 200,000 miles as a season ticket holder.

* * *

WHOLE PASSENGER TRAIN LESS ENGINE RERAILS ITSELF

Cases are known to have occurred in this country of engines, or some of the wheels of engines, becoming derailed at speed and derailed again without damage to the engine or delay to traffic. In the following instance, however, described by a retired Indian railway officer, the whole of a passenger train except the engine appears to have left the rails and subsequently rerailed itself with unpleasant effects upon the passengers and guard. The account of the occurrence is as follows:—

When a passenger train pulled up at an Indian station, all the frightened passengers leapt out in panic, with fearful tales of how they had been thrown about in their carriages. Their injuries proved that something exciting had happened, and although an examination showed that the whole train had been derailed, it had become rerailed before it arrived at the station. The guard was found unconscious in his van, and the driver reported that he noticed nothing unusual during the journey. The derailment occurred at a low joint near the junction of a loop with the main line, and in order to shield himself, the permanent way inspector secretly replaced the damaged track before an enquiry was held. But he forgot to replace the oil-stained ballast, and a suspicious, clean looking bit of track betrayed him to an observant engineer, who found that the derailed wheels on one side mounted the V of the crossing and became rerailed, while the opposite wheels were guided into position by the crossing check rail.

* * *

As regards George Stephenson, he looked like a broken-down old parson—at least that was the impression he gave me. When the idea of railways was first mooted on the Continent, he went to Spain on behalf of a company in which I was interested, to inquire into the conditions of the country, and to see whether railway development in the Peninsula was likely to prove remunerative. He travelled up and down the land, and when he came back—although paid £100 for his report—contented himself with saying: "I have been a month in the country, but have not seen during the whole of that time enough people of the right sort to fill a single train." This was all we could obtain from him. And, after all, perhaps he was right, for very few Spanish railways have turned out to be gold mines. — *From the "Memoirs of Sir Edward Blount."*

* * *

The "pleasure tickets" which were once issued by the Cambrian Railways were often used by funeral parties.

* * *

The Nine-Car Train Cake

For a staff gathering of the London Underground railways this unusual cake was made by the London Passenger Transport Board's catering section. It commemorates two noteworthy achievements of the year—the running of a 9-car train on the Northern Line and the introduction on a platform at Tottenham Court Road of a continuous frieze bearing the name of the station. The cake was cut by the General Manager of the Railways (Mr. J. P. Thomas)

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

INDIA

Rolling Stock Programme, 1938-39

An explanatory memorandum issued by the Government of India has answered the criticism that the rolling stock programme for 1938-39 amounting to Rs. 4 crores (£3,000,000) was rushed through without due consideration of the Wedgwood Committee's conclusion in regard to the adequacy of the existing rolling stock. It has been contended that the programme submitted to and sanctioned by the Standing Committee for Railways a few months back conflicted with the views expressed by the Wedgwood Committee. Actually, both the Government of India and the Standing Finance Committee had given careful consideration to the observations of the inquiry committee on the rolling stock position prior to the approval of the programme. The Government memorandum explains that the inquiry committee compared the figures of traffic and the rolling stock for the years 1929-30 and 1935-36, and that their views were greatly influenced by the decline in traffic since 1929-30. Figures relating to the substantial increase in traffic during the year 1936-37 were not available to the committee. These show that the freight ton-miles on the broad gauge railways and the passenger train-miles on the metre gauge systems in 1936-37 exceeded the corresponding figures for 1929-30. The current year's traffic and earnings are already substantially in excess of the corresponding figures of last year, and it is expected that the traffic handled during the year will be much more than in 1929-30 as there are fair prospects of the present satisfactory conditions continuing or even improving further. In the circumstances, the Government of India and the Standing Finance Committee would be failing in their responsibilities if they refused to make provision, within reasonable limits, for the requirements suggested by the railways. Even after the provision of the stock covered by the programme just approved, it is estimated that there will be 730 fewer locomotives and 587 fewer carriages than in 1929-30.

The inquiry committee considered the work of the Transportation (Traffic) Departments efficient and economic, though it directed attention to the possibilities of (*a*) improvement of passenger and goods services by acceleration, (*b*) of improved operation by the reduction of loads, (*c*) of better turn round of wagons, and other methods which would secure better use of stock. These questions are now being investigated by two officers of the Railway Board, placed on special duty. The memorandum points out that even if the results sought were practicable, they could be achieved only gradually, and as a consequence of measures of reorganisation effected after very careful examination. If such results were obtained, they would be reflected in future rolling stock programmes. In the meantime the programme for 1938-39 would be proceeded with.

Indian Stores Department

The report of the working of the Indian Stores Department during the year 1936-37 shows that the purchases by the department on behalf of the Indian railways increased by 24·6 per cent. to Rs. 3·62 crores (£2,715,000).

The purchases consisted of a wide variety of articles of local and foreign manufacture, and included an electric passenger locomotive for the Great Indian Peninsula Railway, costing over £23,600. During the year, the experts of the department completed the inspection of wagons, cast iron sleepers, and other materials, valued at over Rs. one crore (£750,000). Rails, fishplates, structural steel, and similar materials weighing over 336,000 tons were inspected for the railways and other authorities. Structural steel inspected included the six 105-ft. deck spans and seven through spans of 331 ft. for the Meghna bridge, which has just been completed on the Assam-Bengal Railway, and the first instalment of material manufactured by the Tata Iron and Steel Company for the new Howrah bridge.

The officers of the department continued to collaborate with the Central Standards Office of the Railway Board for the standardisation of the numerous articles used on the railways.

Railway Freight on Raw Cotton

The East Indian Cotton Association has submitted a representation to the Chief Commissioner of Railways for the reduction of the railway freight on raw cotton over the G.I.P.R. by 50 per cent. It is argued that the freight rate on raw cotton has been maintained at a high level on the basis of the price of cotton obtaining during the post-war boom period, and is actually 50-100 per cent. above pre-war rates. The price of cotton has since substantially fallen and is now below the pre-war level. Moreover, the sale of Indian cotton abroad has been subjected to intense competition since the abandonment of the Government policy in the U.S.A. to support cotton prices by crop-restriction, and by the grant of loans to farmers. The association points out that over 3,000,000 bales of cotton have to be exported during the present season in competition with America and other countries. The railway freight is the largest single item of charge on export cotton that admits of reduction. A freight concession, it is urged, will be in the interests of the railway, for, the association says, without some such relief the crop may not be picked at all in certain areas, and, moreover, a substantial reduction in future cultivation may result. There is also the possibility of a diversion of the heavy road traffic in cotton to Bombay to the railway by the attraction of a reduction in freight rates.

ARGENTINA

Meeting of the Local Branch of the Institution of Mechanical Engineers

The annual meeting of the River Plate branch of the Institution of Mechanical Engineers was held in Buenos Aires on November 9. Mr. W. C. R. Livesey, Chairman of the branch, presided. The report on the current year's work, presented by the Honorary Secretary, Mr. D. S. Purdom, showed that there were 84 members on the roll, inclusive of full members, associate members, graduates and students, an increase of two over last year. Seven meetings had been held during the session, and visits had been paid to the Swift freezing establishment at La Plata, the B.A.W.R. workshops at Liniers, and the Ducilo artificial silk factory. A projected visit to Tucuman had had to be cancelled. The annual dinner, held on May 13, took the form of a Coronation celebration. The report also mentioned that, in common with the other institutions comprising the local centre, the branch had applied for membership of the Instituto Argentino para Racionalización de Materiales. A committee representing the British Standards Association had been appointed.

The following committee was then elected for the ensuing session:—

Chairman, Mr. W. C. R. Livesey; Honorary Secretary, Mr. D. S. Purdom; Members: Messrs. J. W. H. Rea, W. T. Harvey, E. M. Cockshott, S. Pinsent, G. de Bourbel, A. E. Livock, Major R. K. Hubbard, Messrs. A. T. Nickson and W. F. Nixon.

Local Institute of Transport Centre Meeting

A meeting of the Argentine and River Plate Centre of the Institute of Transport, held in Buenos Aires on November 12, was devoted to the discussion of six papers submitted in the annual competition open to non-corporate members of the institute. In the absence of the Chairman, Mr. J. G. Mayne, Mr. C. R. S. Harris, Director-General, B.A.G.S. and B.A.W. Railways, presided. The subjects dealt with in the various papers, which were submitted under *noms-de-plume*, were: "Passenger train acceleration"; "Railway collection and delivery service"; "A radical departure" (embodying some original suggestions for the use of containers); "Public opinion"; "The new railway law as affecting the Claims Department"; and "The wagon

common user system." In addition to the Chairman, the following took part in the discussion: Messrs. R. Woolmington, T. C. S. Haslam, A. S. Matthews, G. C. Bonner, E. A. Richards, and F. C. Egerton. The prize, consisting of a set of books to the value of $50, was awarded to Mr. P. E. Jefferey (Graduate), Traffic Department, B.A.P. Railway, for his paper on "Railway collection and delivery service." At the conclusion, the Chairman thanked all those who had sent in papers.

BRAZIL

The Victoria Minas Railway

The programme of betterments to be carried out on the Victoria Minas line during the coming four years 1938-41, has been approved by the Ministry of Communications. The cost is to be met ut of the proceeds of the 10 per cent. surcharge on the tariffs of the railway, appropriated proportionately to rolling stock and new works. It is proposed to acquire two articulated locomotives and from 40 to 60 covered wagons, while the remainder of the expenditure approved is on the improvement of the repair shops and the erection of a station building at Anna de Mattos.

UNITED STATES

New N.Y.N.H. & H.RR. Grill Cars

From November 15 to 18 the first of the new grill cars of the New York, New Haven and Hartford Railroad were on exhibition at Boston, Providence, New Haven, Hartford, and Springfield stations. It is claimed that they are the most modern dining vehicles in North America, combining the cafeteria, soda fountain, and bar, and the service of lower-priced meals than in the ordinary dining cars.

The kitchens are in full view of the diners, being immediately behind the service counters, which are arranged centrally between the two dining compartments with their *tête-a-tête* tables, the seats of which are settees with their backs to the windows and facing the central aisles. In this way there is seating for 53 diners at a time. The decoration is striking and unique, mainly in aluminium and red colouring, but its centre-piece is the front of the service counter, consisting of an etched glass panel illuminated from behind with diffused lighting. At the two ends are depicted the old State House in Boston and the City Hall in New York respectively, and between them is an outline of the southern New England coastline, with the principal cities designated, signifying the New Haven's shore line route between Boston and New York; along this line runs a streamlined train.

The kitchen is very compact and measures 20 ft. × 6 ft. It includes bar, soda fountain, dishwashing apparatus, refrigerator, steamers, broilers, and coffee machine, as well as complete pantry equipment. Like all modern stock in the U.S.A., these cars are fully air-conditioned, and the entire lighting is of the spot-ray type. Typical menus are as follow:—

Breakfast: 35 cents (say, 1s. 6d.)—
Orange juice, bacon and egg, coffee and rolls.

Luncheon: 60 cents (about 2s. 6d.)—
Lamb chop, mashed potato, peas, lemon meringue pie, coffee and rolls.

Dinner: 60 cents (2s. 6d.)—
Fried chicken, French fried potatoes, string beans, ice cream, coffee and rolls.

New Streamliners

Several new streamlined trains are shortly to be placed in service by the American railways. The Union Pacific and the Santa Fé, each with a new 17-car, diesel-powered train, will offer high-speed services between Chicago and Los Angeles twice weekly instead of once each week as now provided by the City of Los Angeles of the Union Pacific and the Super Chief of the Santa Fé. These trains are extremely popular and are booked solidly far in advance; the supplemental fare on them is to be increased from £2 to £3.

The Baltimore & Ohio Railroad has rebuilt standard cars for a luxurious streamlined train to be used on its Royal Blue service between New York and Washington. The locomotive used on this train has likewise been streamlined, and the whole train has been given a blue and cream livery.

Train De Luxe for Coach Travel

The Reading Railroad has received from the builders a five-car stainless steel train, to operate in its Philadelphia—New York service, which will be the first train of this type in the Middle Atlantic States. Steam locomotives will be used to haul this train, and these have been streamlined with stainless steel jackets to match the cars. The Reading train is for coach passengers only, no Pullman cars being included. Four of the five cars are coaches, each with a smoking lounge at one end. The middle car is a combined dining and cocktail lounge, affording a considerable degree of luxury for passengers who pay only a penny a mile.

Passenger Fares Increase

The Western railways have made a few minor increases in some of their passenger fares as, for example, single journey intermediate fares (valid in "tourist" sleeping cars) raised from 1d. to 1½d. per mile, and 30-day return journey coach tickets raised from 180 per cent. of the single journey rate (1d. a mile) to 190 per cent. In no case, however, have the Western rates been brought fully up to the maxima permitted by the Interstate Commerce Commission, namely, 1d. a mile in coaches and 1½d. in Pullmans.

Only the Eastern railways are seeking permission to charge more than 1d. a mile for coach travel, 1¼d. being the rate they ask for. It is doubtful, moreover, whether a show of hands would disclose the majority even of the Eastern lines favourable to such an increase. In October gross receipts of the railways were almost 5 per cent. lower than in October last year, whereas passenger receipts were well above those of October, 1936. Many passenger officers are inclined to doubt the wisdom of making changes in rates which are producing increases in traffic and revenue despite a recession in general business.

Freight Decline Serious

The decline in freight traffic has reached serious proportions; car loadings currently averaging as much as 17 per cent. lower than at this time last year. Only a quick upward adjustment in freight rates, it would appear, can save the railways from entering upon a very lean period. Fortunately, there is widespread public support for the increase of 15 per cent. which the railways are asking from the Interstate Commerce Commission, much of the support coming from prominent traders who will have to pay the bill. Persons prominent in the Government likewise are supporting the increase, among them the Secretary of Commerce in President Roosevelt's Cabinet; and the leaders of the labour organisations are also favouring the increase.

No Higher Rates Till March

The Interstate Commerce Commission opened its hearings on the request for the increase on November 29 and testimony of leading railway men was taken for more than a week. One of the leading arguments advanced by the railways for the increase is that, if they get it, they will greatly increase their purchase of cars, locomotives, and other products of industry, thus putting a brake upon the serious recession in all lines of business which is occurring. The Interstate Commerce Commission expects to continue its hearings until February 7, which means that no relief can possibly come until March, at the earliest.

MEXICO

The New Central Station in Mexico City

The new Central station in Mexico City, terminus of the National Mexican Railways, was inaugurated on the evening of September 16, day of the Feast of National Independence. The opening ceremony was performed in the presence of His Excellency Señor Eduardo Suarez, Minister of Finance, representing the President of the Republic, General Cardenas. Many other high Government officials were present as well as the heads of the railway administration and principal employees. In spite of an unusually heavy downpour of rain an enormous crowd gathered to witness the ceremony.

The Minister, accompanied by Señor Antonio Madrazo, President of the National Railway Department, was received by Señor Conrado C. Rochin, Vice-President, with the chief officials of the railway administration, who conducted him through the spacious

concourse and booking halls of the new station, to the despatchers' office, where His Excellency moved the switch which turned on all the lighting system of the station and tracks, giving at the same time the signal for the entry of train No. 4 from Nuevo Laredo, then due to arrive. The Minister was next conducted to a dais on the concourse where he unveiled a memorial plate, and made an eloquent speech recounting the recent railway achievements.

The new terminus occupies the site of the old Central station and has been constructed on the most modern lines, the superficial area of the booking hall alone being some 1,200 sq. m. The construction of the station has been hastened in view of the increase in international tourist traffic, and especially since the introduction of through bookings and direct train service from the U.S.A.

CEYLON

The State Council and the Railway

When the State Council met during the first week in November, Mr. J. L. Kotalawala, Minister of Communications and Works, moved that the following recommendations of the Executive Committee of Communications and Works be approved:—

1. The railway should not be closed down.
2. Steps to control road transport should be taken at the earliest possible moment and should not be made to await any decision on matters affecting the railway.
3. Control of road transport and the reorganisation of the railway should be treated as entirely separate problems.
4. The Executive Committee of Local Administration should be in charge of road transport until such time as an alteration in the Constitution necessitates the bringing of all forms of transport under one ministry.
5. Legislation should be passed to enable the Executive Committee of Local Administration to introduce road transport control measures before the next licensing period commences.
6. The State Council should continue to retain its control over the railway through the Executive Committee of Communications and Works.
7. The reorganisation of the railway should await the arrival of the new General Manager.
8. The present system of control of signalling (the mechanical by the Railway Signal Engineer and the electrical by the Telegraph Department) should remain until the arrival of the new General Manager.
9. No section of the line should be closed until the regulations for the control of traffic by road have been put into operation.
10. Abandonment of any section should be resorted to only after every effort is made to make that section pay.
11. The Batticoloa-Trincomalee section should not be regarded any differently from the other sections of the railway.
12. An elaborate system of separate accounts is not necessary for the Batticoloa-Trincomalee Light Railway. There is, however, no objection to the income and expenditure of this and other sections being separately compiled, as is done even now.
13. The railway should not run road and air services for the present.
14. The post of General Manager should be filled by importing an officer of proved ability from a British railway.
15. The fixing of any revised scales of pay and conditions of service should await the arrival of the new General Manager.
16. The Commercial Branch should have a full-time senior officer at its head.
17. The pros and cons of mechanical accounting should be further investigated before this system is introduced.

A sum of Rs. 2 lakhs is expected to be saved in the Railway Bill upon overtime and Sunday pay as a result of amendments to the rules carried out by the Treasury at the instance of the Executive Committee of Communications and Works. Another item of saving is the proposed stoppage of bonuses to signalmen, pointsmen, &c., as from October next year.

Among other measures contemplated for improving the finances of the railway is a big publicity campaign directed to attracting third class passengers who, it is pointed out, are the source of the bulk of passenger revenue. Apart from advertising in the local Sinhalese, Tamil, and English papers, it is proposed to make use of cinema films, posters, and all other means.

The principal steps already taken to introduce economy in the railway are summarised as follow:—

An advisory committee to make special recommendations to the Executive Committee on the recommendations of the Transport Commission, and another committee to make recommendations on the financial side of the railway working have been appointed.

Steps have been taken to recruit a suitable General Manager from a British railway.

Other Government departments have been requested to absorb staff retrenched by the railway.

Alterations have been made in overtime and Sunday pay regulations giving an annual saving estimated at about Rs. 2 lakhs (as just mentioned).

Certain allowances have been stopped which will give a saving of over Rs. 20,000 a year from 1938-39.

Reductions have been made in rates and fares in certain sections, and the cost of return and week-end tickets reduced throughout the railway.

A new timetable giving a better service was introduced as from November 8.

An officer who will be able to devote practically his whole time to commercial work has been appointed temporarily to the post of Deputy General Manager (Commercial).

Money is being made available for advertising, and the policy is being changed with a view to reaching the third class rather than the first class passenger.

The new timetable is printed in Sinhalese and Tamil as well as in English.

Mr. C. H. Collins, as Deputy Financial Secretary, and Mr. O. E. Goonetilaka, as Auditor-General, are in daily contact with the actual working of the railway. The Executive Committee feels that it is very fortunate that it has been able to avail itself of the services of these two officers.

Road Transport Plan Approved

The new system for the control of road transport so as to eliminate the cut-throat competition with the railway has been approved by the Executive Committee of Local Administration. The Executive Committee's report on this subject to the State Council, embodying its decisions on the recommendations of the Transport Commission, is now before the Board of Ministers, along with the report of the Executive Committee of Communications and Works on the subject of the future working of the railway.

The immediate introduction of insurance against third party risks, the laying down of passenger fares for buses and timetables for their running, as well as the fixing of minimum wages of bus drivers and conductors, are some of the measures proposed. The number of licensed vehicles will also be limited in accordance with public needs and transport already available.

SPAIN

Railway Nationalisation

A decree of the Spanish Government dated in Valencia, October 21, provided for a supplementary credit of ninety millions of pesetas as an addition to the amount of the "repayable advances" already placed at the disposal of the National Railway Committee, to cover the deficit on working of the lines placed in the charge of the committee under the Decree of August 3, 1936. This order bears the same date as the Decree nationalising the Spanish Railways, a summary of which was published in THE RAILWAY GAZETTE of November 19 last.

The Sud Express

As already announced on page 845 in our issue of November 12, the Sud Express is again running between Paris and Lisbon, passing through certain cities in Nationalist Spain. The timings are as follow:—

Paris	...dep.	11.30	Lisbon	...dep.	8.40
Irun	...arr.	20.59	Salamanca	dep.	23.40
Irun	...dep.	21.45	Irun	...arr.	9.35
Salamanca	dep.	7.20	Hendaye	...dep.	11.04
Lisbon	...arr.	23.57	Paris	...arr.	20.48

Stops between Irun and Salamanca are scheduled at San Sebastian, Vittoria, Burgos, and Valladolid, but there is of course no connection for Madrid.

Collectivisation in Catalonia

Difficulties arising out of the application of the principle of "collectivisation" are apparent in the circular of the Council of Economy, dated in Barcelona, October 16. The circular refers to the attempt of the workers' committees to divide up part of the capital held by them in cash, either as profits or as wage increases. The council points out that this is illegal, and the committees are notified that the capital and profits of the undertakings are collective and not exclusively for the workers employed in the industry. It is clearly specified in the Decrees relating to collectivisation how the profits of any undertaking are to be dealt with, and no steps may legally be taken to dispose of such profits until the proper balance sheet has been drawn up and approved by the Council. The circular goes on to say that wage increases cannot be put in force without the approval of the Commission for the Regulation of Salaries, created by Decrees of October 5 and 12. The circular ends on a note of warning, and expresses the hope that the workers will continue to give those proofs of capacity and responsibility which have so far characterised their work in administering the undertakings under the new regime, and that it will not be necessary for the Government to intervene energetically in the interests of the workers themselves.

EXTENSION OF TRAIN AND TRAFFIC CONTROL, L.N.E.R.

New control offices recently opened at Newcastle-on-Tyne and York

(*See illustrations on page* 1262)

A FURTHER stage in the supervision of train and traffic working on the L.N.E.R. was reached with the opening of control offices at Newcastle on June 21 and York on October 18 last. The opening of the control at Newcastle is a landmark of some importance since it forms the last link in the chain of controls on the East Coast Route. Trains between King's Cross and Glasgow are, at every point on their run, now under the care of one of the six control offices at King's Cross, Doncaster, York (Main Line), Newcastle, Edinburgh, and Coatbridge. The section of the East Coast Route between Newcastle and Berwick, supervised by the Newcastle control, comprises 68 miles of double line. The traffic consists almost entirely of long-distance passengers and freight of high class and is conveyed by express trains in both categories. Schedules already fast have recently been accelerated still further. New high-speed units have been introduced in The Coronation express, and the number of No. 1 and No. 2 express freight trains has been multiplied in the last two years.

On this section through express passenger trains as well as freight trains are reported to the control, and the controller performs in addition the function of traffic controller for the marshalling yards at Heaton, Berwick, and Tweedmouth, through which are staged the bulk of the traffic between England and Scotland. The dense suburban passenger traffic on the North Tyneside electrified area, which is coupled to this circuit is, however, not controlled except in emergency.

Between the main line from Newcastle to Morpeth and the coast lies the bulk of the Northumberland coalfield. The traffic passes mainly by sea to home and foreign ports through Blyth and Percy Main, and is lifted from colliery to shipping point by mineral engines based on those two centres. This area forms a separate section in the Newcastle control in which traffic working as well as train control is an important function.

The area round Newcastle Central station forms a third section with a peculiar local problem. Owing to the location of the High Level and King Edward bridges over the Tyne all traffic from north to south of the Tyne and *vice versa*, as well as that from east and west of Newcastle, must pass through the bottleneck at the Central Station. The station is, moreover, the terminal point for a dense suburban service from both sides of the river.

The fourth section controls the Newcastle—Carlisle, Newcastle—North Wylam, and Newcastle—Blackhill lines, an area combining a suburban passenger service with through passenger and freight trains.

The control is open from midnight on Sunday to midnight on Saturday, and in all supervises 212 route miles of railway. It is installed in the District Superintendent's Office at Newcastle in a room adjoining the passenger and freight train sections so that close co-operation is ensured. The equipment, in common with other district controls on the N.E. Area, consists of selective hand telephones and the graphical recording system. The telephone equipment was manufactured by the General Electric Co. Ltd.

Each controller is provided with a switchboard to which all telephone circuits covering his area are connected. Inward calls are indicated by means of lamps, whilst outward calls are obtained by dialling the number of the station required. Facilities are provided for switching any call to the Deputy Chief Controller or to the wagon control as necessary. Automatic switches are provided at a number of points to enable communication to be established with local omnibus circuits.

The graphical system of recording is used in which sheets of squared paper are mounted on rollers let into each controller's table. Signalboxes are marked horizontally at the left hand side and hours vertically across the top. Trains are recorded by pencil and ruler and are shown as lines across the graph sloping from top to bottom. Different coloured pencils are used for trains running on independents, or when delayed by signals. It is claimed for this system that it facilitates both the controller's work, by affording a complete picture of his section at any given moment, and subsequent supervision, by concentrating the events of a long period on one sheet of paper and showing at a glance the cause of any delay.

The York Control

The district control at York is an extension of the old North Eastern control at Leeds which was transferred to York earlier this year.

The lines under regular supervision are:—

York and Leeds.
Micklefield and Selby.
Church Fenton and Castleford Whitwood.
Garforth and Castleford.
Leeds and Northallerton.
Starbeck and Poppleton Junction.
Melmerby and Thirsk.
York and Scarborough.

In addition the following lines are partly controlled:—

Scarborough and Whitby.
Malton and Gilling.
Malton and Whitby.
Scarborough and Pickering.
Knaresborough and Pilmoor.
Melmerby and Masham.
Ripley Valley and Pateley Bridge.
Harrogate and Wetherby.
Wetherby and Cross Gates.
Wetherby and Church Fenton.
Burton Salmon and Dearne Junction (S. & K.).

It will be noticed that no portion of the East Coast main line, which passes through the York District between Shaftholme junction, north of Doncaster, and Northallerton is controlled from this office. The main line between Shaftholme junction and Newcastle is supervised by the main-line control installed in the office of the Superintendent, N.E. Area.

Many of the branches controlled carry a dense traffic, especially that between York and Leeds, and between Church Fenton and Castleford. In addition to the express passenger trains serving Lancashire, the Midlands, and the West of England, there is a large volume of freight traffic exchanged with the L.M.S.R. at Leeds and Normanton. Despite existence of four running lines between York and Church Fenton, line occupation is a problem which the installation of a control should help to solve.

The other principal feature is the holiday and excursion traffic with Scarborough. Scarborough is increasingly popular with people in Lancashire, the Midlands, and Eastern Counties. A local train control has supervised the terminal working on busy days for some years past and will continue to function, but the wider view obtained by the district control will assist in working trains into and out of the Scarborough area to the best advantage.

As at Newcastle the equipment at York consists of electric hand telephones and the graphical recording sys-

tem. The telephone equipment was supplied by Standard Telephones & Cables Limited. Five controllers' switchboards are provided and, as all circuits are connected to each switchboard, no internal switching between the desks is necessary. A call can be originated or answered by any controller or by the Deputy Chief Controller, and the operation of the speaking key on one desk gives a red "Circuit engaged" signal on all the other desks. All the circuits can be used simultaneously from different desks. The controllers are provided with a moulded hand microtelephone and all the new station telephones are equipped with a similar hand set.

GERMANY'S FIRST MAIN LINE

(From a correspondent)

A PARALLEL which seems to have escaped notice is that 1937 has marked the centenary of opening of the first sections of main line in both Great Britain and Germany. In Great Britain, of course, the London & Birmingham and the Grand Junction Railways occupied outstanding places in the development of main-line railways, and in Germany a comparable line was the Leipzig-Dresden Railway. The little Ludwigsbahn, between Nuremberg and Fürth—the first in the country—had been opened at the end of 1835, but was of local importance only, and never became part of a main-line route, in spite of the hopes of some of its promoters. Its success from the beginning, however, was such as to leave no doubt in the minds of those competent to judge that railways were practicable and that Germany must turn to the new mode of locomotion if it was to hold its own in the industrial and political spheres.

The Leipzig-Dresden route formed part of a scheme drawn up by the railway pioneer List, and was the corner stone, so to speak, of the German railway system. His choice of Leipzig as the starting point for main routes in Saxony, to form connections with others in neighbouring States, was justified by the fact that it was a prosperous and wealthy city, standing in special need of improved means of communication by reason of its lack of water transport facilities. Whereas goods traffic was apparently not contemplated at first on the Nuremberg-Fürth Railway, it was the principal consideration in the Leipzig-Dresden proposals. Saxony possessed many important industries which had greatly developed in the latter half of the 18th century and the population in many districts had grown rapidly. Much of the trade of the State, too, was with foreign countries and improved access to seaports was becoming increasingly desired. A railway from Leipzig to Dresden was an essential step in this direction. The route was not difficult and no severe gradients were involved, while there was already a considerable passenger traffic by road between the two cities, which augured well for the success of the scheme.

List was successful in persuading some young Leipzig merchants to lend their support to it, among them Gustav Harkort (Friedrich, his brother, was a prominent advocate of railways) who eventually became chairman of the concern and held that post for 30 years. Streets in Leipzig bear his name and those of his chief associates. The king and government of Saxony were fortunately not unsympathetic and viewed favourably a petition presented in 1833 by a large and influential body of citizens. A company was founded in 1835, the necessary legislation being passed in May of that year. The first general meeting was held in June. The route was chosen, not without some debate, to pass through Riesa and involved the first railway crossing over a waterway in the country, as well as the first tunnel, at Oberau, demolished in quite recent years. Construction was begun at several points almost simultaneously. In November, 1836, the first locomotive, the *Komet*, arrived from England with its driver. Its cost is given as £1,838 and it was shown in steam, but with its wheels raised clear of the ground, as a public exhibition. A second engine, *Blitz* (*Lightning*), followed, also with its driver, in the spring. Rails were obtained from England and continued to be so until 1848. A locomotive called *Saxonia* was built at Uebigau, near Dresden, in 1839 to the designs of a Professor Schubert, and thenceforward the company made every effort to rely on home manufactured equipment.

On April 24, 1837, the first section was opened. This extended from Leipzig to a place called Althen, about 10 km. (6·21 miles) distant. The first public trips were made to the accompaniment of every manifestation of public interest, with an abundance of flags, music, and cannon firing, as seems to have been usual in those days. The board of directors, as they gave notice, rode in the first train to assure the public of the solid and satisfactory character of the line and rolling stock! The management received much favourable comment from contemporary writers. An elaborate set of rules and regulations had been drawn up, among them one compelling persons to submit to a police examination before being granted a ticket, but with what precise object does not appear. Apparently the respectable board desired none but respectable clients. The train services were well patronised from the beginning in spite of such formalities, even on so short a section.

Construction of the remaining portions was carried on energetically, and on April 7, 1839, the entire line was complete, the full public service beginning two days later. It was 115 km. (71·46 miles) long, and a journey of two days had been reduced to one of 3¼ hours. The undertaking made a profound impression in Germany and thenceforward railway communication grew rapidly; there were 6,750 km. (4,194 miles) of line open in German-speaking territory by 1850. The route mileage owned by the Leipzig-Dresden company eventually reached 296 km. (184 miles). Although the original capital had soon to be increased, costs of construction exceeding those estimated, the line always paid well and was never in financial difficulties. It was not taken over by the State until 1876. Saxony at first favoured private ownership, but in 1847 took over the Leipzig-Hof line, the builders of which were in difficulties, and ultimately the Saxon State Railways formed one of the most important systems merged to form the Reichsbahn after the war. The great terminus at Leipzig, begun in 1900 and finished in 1915 ranks among the finest of the world's stations. It had formerly a Saxon and a Prussian side, but this distinction no longer obtains. Leipzig is now included in the divisional management of Halle.

To commemorate the opening of the first section an interesting exhibition of prints, books, medals, and other items of historical value was organised at Leipzig and addresses given by various authorities connected with the Reichsbahn, the cities of Leipzig and Dresden, and the List Society. List's connection with the line was unfortunately not a happy one. Not being a Leipziger he was held ineligible for the board and seems to have acted in a purely advisory capacity for a time. For some reason he was gradually shouldered out of the concern and this probably had no little to do with his tragic end.

POWER SIGNALLING AT HOWRAH, EAST INDIAN RAILWAY

An all-electric installation with colour-light signals replaces electro-pneumatic apparatus in use since 1906

HOWRAH STATION is the Calcutta terminus of the East Indian & Bengal-Nagpur Railways, and is situated on the west bank of the River Hooghly, opposite the city. The original station, which had only one platform, was built on this site in 1854 as the terminus of the East Indian Railway, which then extended only 40 miles up country. The station has been gradually improved and enlarged, and now has 11 platforms and a centre roadway for cabs. It handles long-distance trains from all parts of India except the north-east, as well as a large suburban service, on both the East Indian and Bengal-Nagpur lines; the adjoining yard deals with the reception and transhipment by wagon-ferry of a considerable proportion of goods traffic entering and leaving the port of Calcutta. The total number of trains a day, passenger and goods, is 122 each way, and as every incoming train must be shunted out to the stabling or washing sidings, and its engine be returned to the locomotive sheds, total train and shunting movements are approximately 3,000 daily. The whole of this service has to be handled over three up and three down lines and an engine line.

In 1906 electro-pneumatic power signalling was adopted, with a 71-lever frame in the Station signal-box, and a 43-lever frame in the box controlling the junction of the East Indian and Bengal-Nagpur Railways, and three 3-lever ground frames. In order to provide greater facilities for handling the suburban trains it was decided to re-arrange the tracks and replace the old electro-pneumatic equipment by an all-electric installation in which the working would be concentrated in one signal box, controlling 36 main running signals, 34 shunt signals and 73 points. There are also four running and four repeater signals not controlled from the box. The work covers a distance of about $1\frac{3}{4}$ miles from the station buffer stops and includes 96 track circuits.

The New Signal Box

The new signal box is a two-storeyed red brick building of modern style, designed by the railway. The top floor comprises a room 28 ft. × 16 ft., having a bay window with raised floor for the cabin master and assistant cabin master, giving them an uninterrupted view of the frame, track diagram and the lines outside; windows along three walls make it light and airy. There is a small extension for record filing cabinets, &c. The walls are painted white and the floor is of concrete containing two longitudinal steel joists to support the frame. Lighting is by architectural tube lights mounted in the roof beams, arranged to throw reflected light from the white ceiling and walls, giving a pleasant diffused effect with minimum reflection from the track diagram. The operator has an excellent view of the lines. The lower floor is divided into relay, battery and maintainers' rooms and a room for the power supply and battery charging equipment. As the signal box is alongside the yard boundary wall, windows could be arranged only along the front wall of the relay and power rooms, but as many as possible have been provided for the former and good electric lighting between each relay rack. Fans have been fitted in the upper room and an exhaust fan in the battery room, with power points on both floors for the maintainer's inspection lamp.

The frame contains 32 signal levers, 28 double point levers, 17 single point levers, 5 spare levers and 2 spare spaces. The interlocking is all-electric, each lever having a 110-V. a.c. forced drop type lock, with light indicator to show when the lever is free. Point levers are locked full normal and reverse only, being operated in one stroke, and have illuminated " N " and " R " indicators. Signal lever locks operate in the normal and normal indicating, or checklock, positions, with a red lamp indication showing when all signals controlled by the lever are " on." Indications for the " off " position of signals are given by yellow bull's-eyes incorporated in the representations of signals on the track diagram. In the case of signals slotted by the Goods Yard or Stabling Sidings boxes, an illuminated " S " indication appears over the lever when the slot has been given. All indication lamps are 12-V., 4-W., behind frosted glass. The lever interlocking, signal and other relay controls are carried over rotary band type circuit controllers, and the point levers have quick-action air break contacts for the point machine circuits; the current taken by these is indicated on an ammeter on the frame cabinet with two light indicators to show when the 110-V. and 10-V. batteries are on charge.

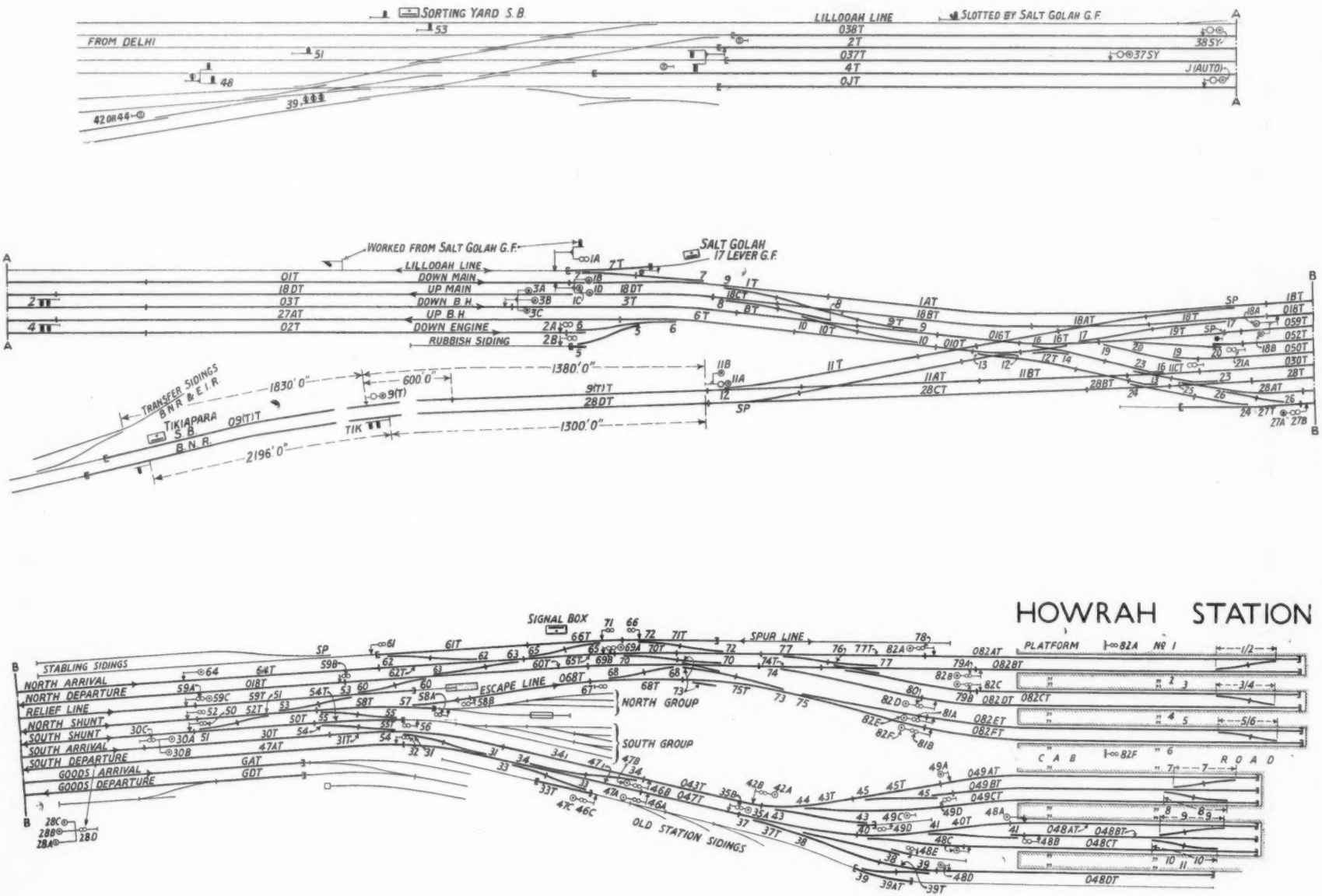
The illuminated diagram measures 15 ft. × 3 ft. 6 in., is of all-steel construction, with matt black finish, and is mounted on the frame cabinet on five chromium plated pedestals, through which the wires pass; in addition it is supported by four ceiling rods. " Track occupied " is shown by two red bull's-eyes per section and, as above mentioned, a clear signal by a yellow bull's-eye together with a " route set " indicator, a white bull's-eye with the route designation painted beside it. This is for the convenience of the operator, especially where a signal reads for more than one route, enabling him to see that the correct one has been set up. Similar white lights indicate the approach of trains on each of the four approach lines. All these lamps are 12-V. 1·2-W., telephone type. Above the diagram is an electric clock operated on the station clocks circuit.

Relay Room

There are two 30-ft. five-bay relay racks of open type with four tiers of teak shelves on both sides, on angle-iron framing, the wires being in open troughs in the middle, and brought to the relays each through a separate hole in a teak backboard, the holes being drilled in correspondence with the relay terminal arrangement. The centre bay inside each rack is a plain board carrying fuses and bus-bars. Incoming cables terminate on A.A.R. terminals on teak boards arranged in " W " formation on angle-iron framing against the back wall of the room. All tails from these cables are treed, brought up in front of the terminal boards, and fanned out to the individual terminals, the separate wires from the latter being then treed again and carried over the top of the room in cable rings to the relay racks and the lever frame, which is directly over the first rack. This arrangement of the wiring is neat and tidy; the wires are easily accessible and clear of damage by rats.

Signals and Ground Apparatus; Track Circuits

Main running signals are of the three-aspect searchlight type, using 12-V. 16-W. single filament lamps. Separate signals are provided for each route except in the case of platform homes, where one signal reads to any of the plat-



Plan showing layout of Howrah passenger yard and its approaches as resignalled with colour-light signals and all-electric interlocking and point operation

forms accessible from the arrival line concerned. Shunt signals are of the unit colour-light type with red and yellow aspects, doublet lenses and 110-V., 25-W. lamps. All signals, running and shunt, are track controlled and, with the exception of the two leading out of the North and South group sidings, stick controlled also. Where a signal has to be passed by a train with the engine in the rear it is held clear until the whole train has done so. The running aspects, yellow and green, are controlled from the signal ahead in the usual manner, but where the latter is a bracket signal, giving a " proceed " indication for a turnout, the signal in rear shows double yellow meaning " prepare to pass next signal at reduced speed owing to turnout." The additional yellow aspect is obtained from a single aspect unit below the searchlight unit, normally unlighted. The two signals on each of the platform home signal posts are not used as running and shunt signals, but for indicating the condition of the platform track, the top one clearing if the line is clear to the buffer stops, the lower one if the platform is occupied. All signals are approach locked, with thermal time element release.

Points are operated by 110-V. d.c. machines, trap points being rod connected to the machine operating the ordinary points moving with them. All points taken in the facing direction by passenger trains have lock rods, double slip points having two, all others being treated as trailing points and having detector rods only; their throw rods are locked in the machine. The points are of the over-riding type, 90 lb. R.B.S. rail, with layouts designed by the railway under I.R.S. permanent way standards. Platform crossovers are worked by ground levers electrically locked from the signal box. There are four pairs of spring return points provided with reflector sign markers showing the letters " SS " in red on a white background. Track circuits are a.c., condenser fed, with vane relays, the condenser being in series with the primary of the feed transformer. For those too far from the signal box for the relay to be housed therein with direct connections, step-up transformers are used, the low tension winding being connected to the rails and a 110-V. relay, fed from the high tension winding being used at the box. Track bonds are in duplicate, No. 8 S.W.G. galvanised Armco iron wires, and track feed connections are twin 7/029 "ite" type insulated cable terminated on A.A.R. terminals in cast iron boxes beside the track, the final connection being stranded Armco iron wire bonded to the rail with channel pins. Apparatus outside the signal box is in welded steel apparatus cases on concrete foundations. Incoming cables terminate at the bottom at the back of a case, the wires coming forward to terminal boards in front, hinged to fall forward at an angle of 45 deg., thus exposing the cable potheads for inspection. Hollow portions of concrete foundations are filled with sand to exclude rats; this has proved most effective.

Cables, Wiring and Ground Equipment

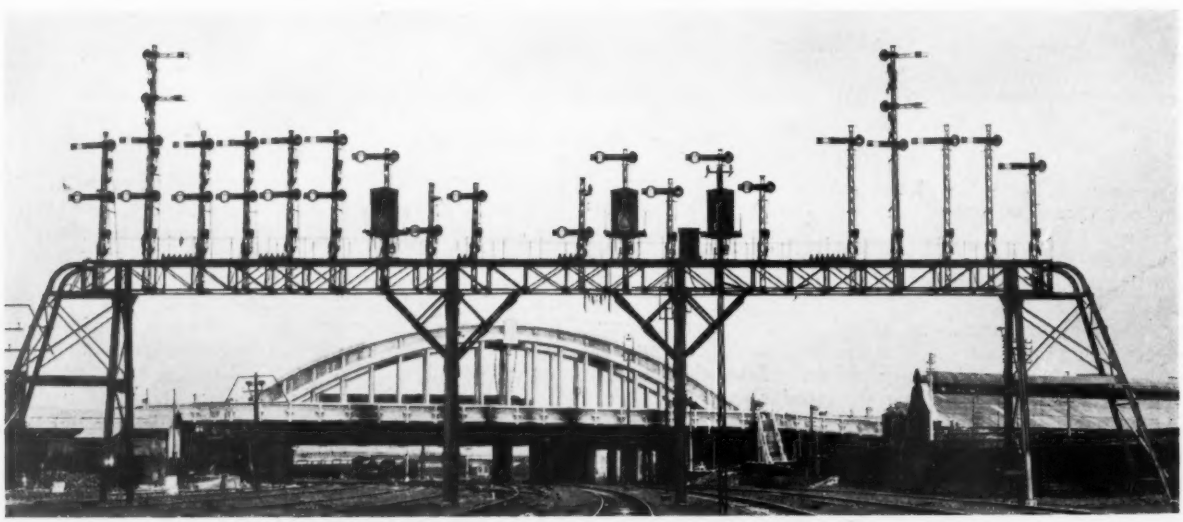
Main cables, separate to each location case from the box, are multicore, oil impregnated, P.I., L.S.S.W.A. cables. The 110-V. a.c. mains are run in a separate twin 19/064 cable, which is looped in at every location. The feeds from the location cases to the various units are multicore " ite " insulated S.W.A. cables, buried in the ground. Main cables are run above ground, in the yard area either on brackets on the boundary wall or in asbestos-cement surface trunking, but beyond the home signals are hung on a pole line from catenary wires. Just outside the signal box it was found necessary to run the main cable right across the yard and a brick duct, large enough for a man to pass through it, was built under all tracks, the cables being run on brackets on the side walls. Single-core 1/064 flameproof wire was used for wiring in the signal-box and location cases.

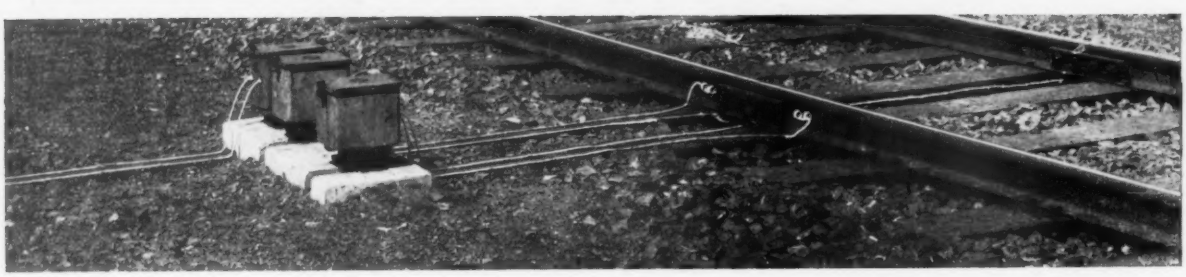
Track, point detector, track repeater and other relays fed from outside are 110-V. a.c., but all relays fed locally in the signal box, signal control relays, route locking relays, &c., are 10-V. d.c.; there are 234 a.c. and 358 d.c. relays. Complete sectional release route locking has been provided throughout, which, with point levers operated in one stroke, enables routes to be reset behind a move with maximum speed. Point detection relays are of the a.c. induction motor type, the a.c. circuit being superimposed on the d.c. point machine control wires in such a way that the a.c. relay checks the correspondence between the point machine and its controlling lever, enabling indication locking to be dispensed with. There is now no block working with the neighbouring signal boxes on the two railways, approaching trains being announced automatically on the track diagram and by

The new Howrah signal box

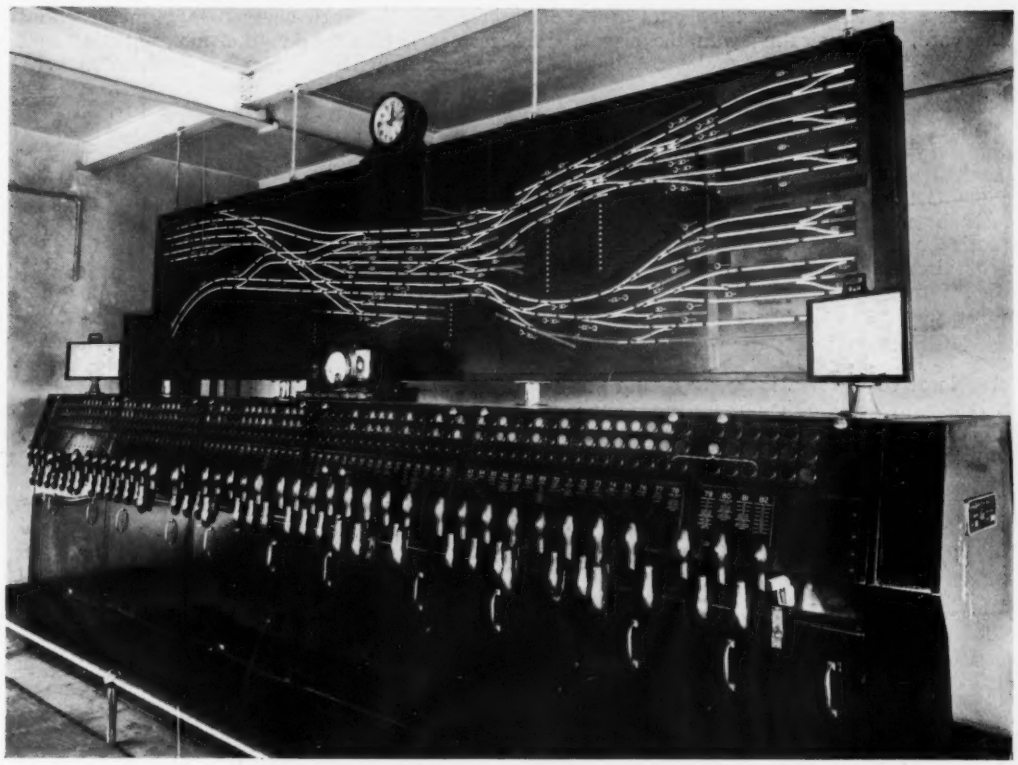
XUM

General layout of yard between signal box and B.N.R. junction





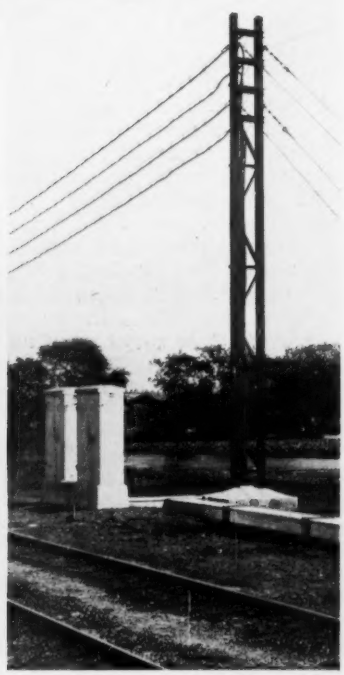
Above, Station down home signals and route indicators for former E.P. layout; and (below) track transformer boxes



Interior of new signal box showing the G.R.S. all-electric power locking frame and illuminated diagram

South departure line signals

Relay and terminal racks inside signal box



Terminal post for aerial cables and location case

telephone. There are 22 outdoor telephones at various points in the yard, communicating with the signal box.

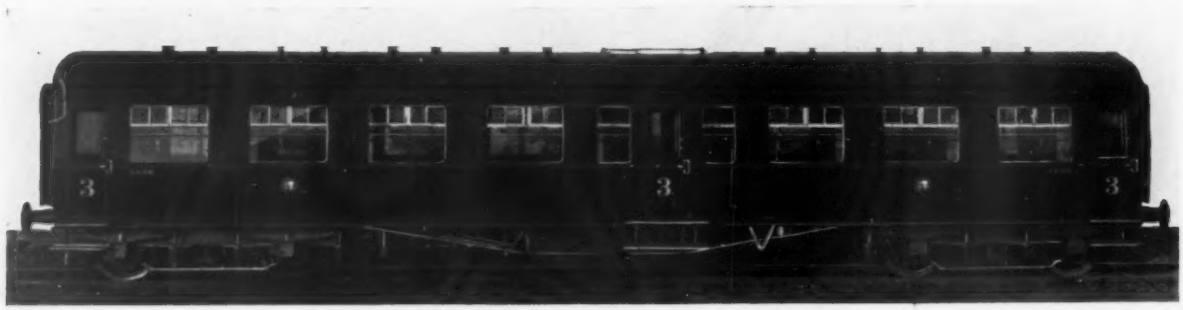
Power Supply

Single phase a.c. power is taken in to the main switchboard in the box at 400 V., 50 cycles. Duplicate feeders run from the railway's own transformer house, itself fed from two sources of high tension supply, and there is a third from the Calcutta Electric Supply Corporation as standby. All these feeders are buried cables, and with three alternative sources of supply, no standby power plant was considered necessary. The incoming power is transformed by means of duplicate 400/110-V. transformers, with changeover switches to cut in either at will, power from their secondaries being supplied to the mains cables leading to the outside location cases and used for the a.c. relay local coils, lever locks, &c. A 110/12-V. transformer is also provided in the box for supplying power to indication lamps. The d.c. power for the point machines is supplied by a battery of 55 120 a.h. Chloride type DBG4 storage cells trickle-charged by a metal rectifier ("transrector"), with an a.c./d.c. motor-generator set to supply a boosting charge when required. Another battery of five similar cells, also trickle-charged, supplies power to the d.c. relays, with a separate 10-V. battery for telephone circuits.

Conclusion

This important installation, for particulars and photographs of which we are indebted to Mr. R. Sinha, Deputy Chief Engineer, Signals, East Indian Railway, was designed to meet that railway's requirements and installed by its own staff, assisted by a representative of the contractors for the signalling equipment, the General Railway Signal Co. Ltd., Australia House, London; the cables used were manufactured by Callenders Cable and Construction Co. Ltd. The contract was placed on April 21, 1934, installation work was carried out under ordinary traffic conditions, and the change from the old to the new method of working took place on November 14 and 15, 1936.

NEW MAIN-LINE COACHES, GREAT SOUTHERN RAILWAYS



One of the new third class corridor coaches for main-line services

THE Great Southern Railways have recently built at their Inchicore works, Dublin, a number of new main-line corridor coaches incorporating the latest refinements although generally conforming to previous standards. The bodies are of teak framing covered with steel panels and mounted on heavy steel underframes. The windows, excepting the door drop frames, are flush with the outside panels and have upper sliding lights. Each vehicle is 64 ft. long over buffers with a body width of 9 ft. 3 in. at the waist. The bogies, which have been designed with special attention to the suspension, are 44 ft. apart, centre to centre, and have a wheelbase of 9 ft. The coaches are painted in the company's standard crimson lake with black and yellow horizontal lines and weigh 29½ tons.

Floors and partitions are of laminated block plywood, and improved spring-suspended gangway connections between the coaches permit of easier passage from one vehicle to the next. Access to the compartments is from a side corridor through double sliding doors arranged to give uninterrupted outlook to the passengers through large side windows. Both first and third class compartments have sponge rubber upholstery, and sponge rubber is also used for the floor coverings. The finish is in various hardwoods, with mouldings and frames to match, and mirrors are provided over each seat back. All ceilings are stippled buff vellum finish. In the toilet compartments hot and cold water is provided, and ample provision has been made for steam heating, passenger controls being provided in each compartment. Electric lighting is general throughout, and the compartments have lights over the seat backs as well as in the ceilings. One of the composite first and third class coaches is equipped with Stones type C pressure ventilation and heating, the first to be used in Ireland.

SOAP FOR RAILWAY CARRIAGES.—The arrangement of a hygienic and constant supply of soap is a difficulty with which railway companies are faced in connection with the provision of toilet amenities on passenger trains. Some of the drawbacks of the still widely used tablet soap are the temptation which it offers to pilferers and the facts that so many passengers either omit to rinse the soap after use, leaving it caked with grime, or leave it in the water, to be recovered in a jellied condition by the next user. The Horton liquid soap system, extensively used by the Southern Railway, has not these disadvantages. Pilfering is impossible and waste is practically prevented as the liquid is rationed out drop by drop—just sufficient being delivered at each tilt of the dispenser for a thorough wash. The passenger has also the reassuring knowledge that the soap supply is fresh and uncontaminated by other hands. The appliance is labour-saving; the durable dispensers having stainless steel fittings need no cleaning attention; and the moulded glass bowls show at a glance when refilling is necessary. It is made by the Horton Manufacturing Co. Ltd. of Ebury Road, Rickmansworth, Herts.

SECTIONAL STEEL POLES

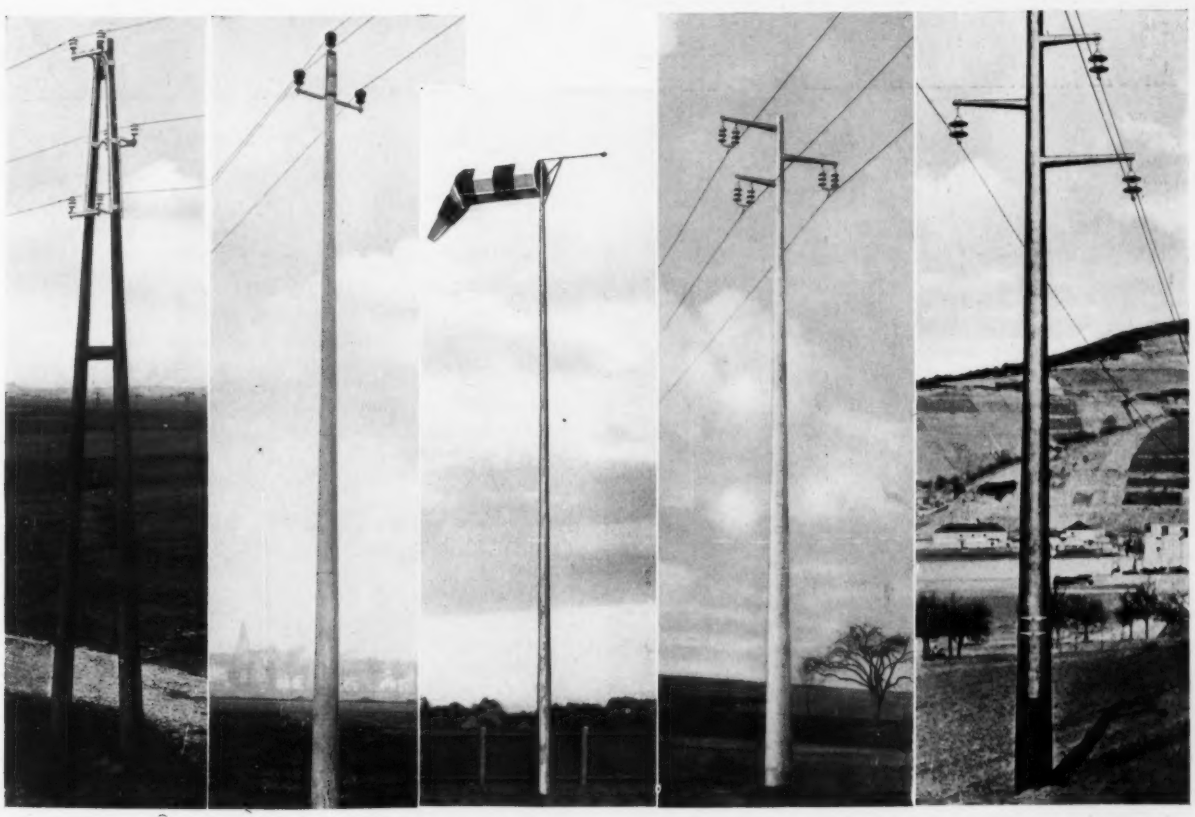
The poles described in this article are built up from standard sections, heavily galvanised for durability in all weathers

THE important functions of steel poles in electrical transmission, lighting, telephone, and telegraph systems warrants closer attention to their design than is always accorded. Hitherto, such poles have often been an adaptation of materials intended for other uses—steel tubes, for example—and when of considerable length galvanising has not been practicable. Such factors as cross-section at various points along the length, thickness of wall, and so on, could obviously not bear the most suitable proportions in poles built up of odd materials.

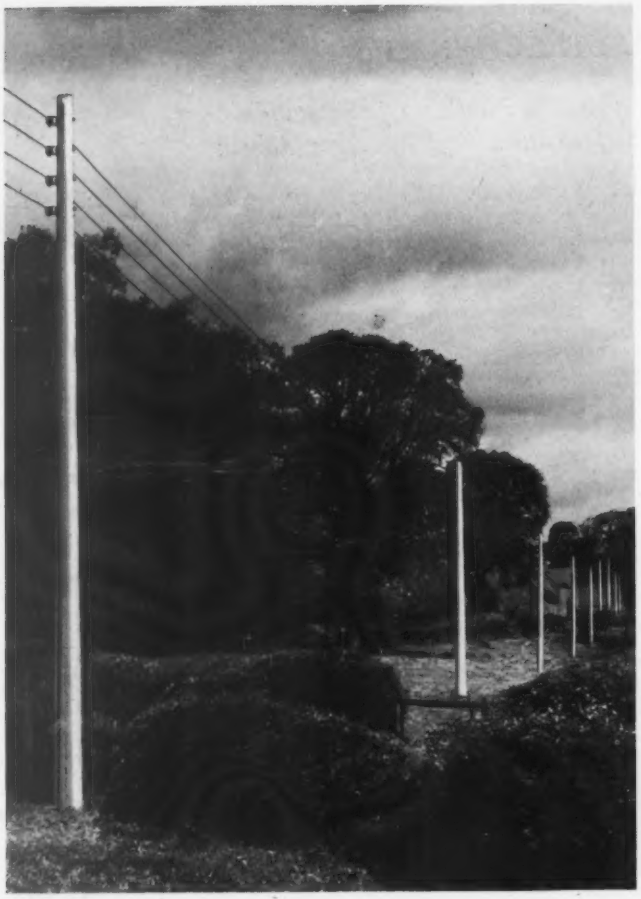
To overcome these drawbacks, and provide a pole which is at once mathematically proportioned, easy to transport, assemble, and erect, and highly resistant to corrosion inside and out, the Adastra sectional steel pole has been introduced to this country by Poles Limited, of London and Birmingham, the sole British Empire licensee for its construction. Adastra poles are considerably lighter than any other form of pole, yet the high-tensile steel, elliptical section, and correct proportioning make them of ample strength. The essential feature of Adastra poles lies in the fact that they are constructed of individual tapering sections, each two metres long, and having an elliptical cross-section. From 14 standard sections, no fewer than 54 different types of single-member poles can be constructed, whilst by the use of a standard coupling, a great variety of " Duo " or " H " poles can be built. The sections are heavily galvanised inside and out by the hot dip process. A further treatment enables a stoved enamel finish in any colour to be applied, further enhancing the protection, and providing for decorative effect where required as in the case of lighting standards, &c., as well as obviating the expense of frequent painting, and the danger or inconvenience of men working on transmission poles.

Economy of Transportation

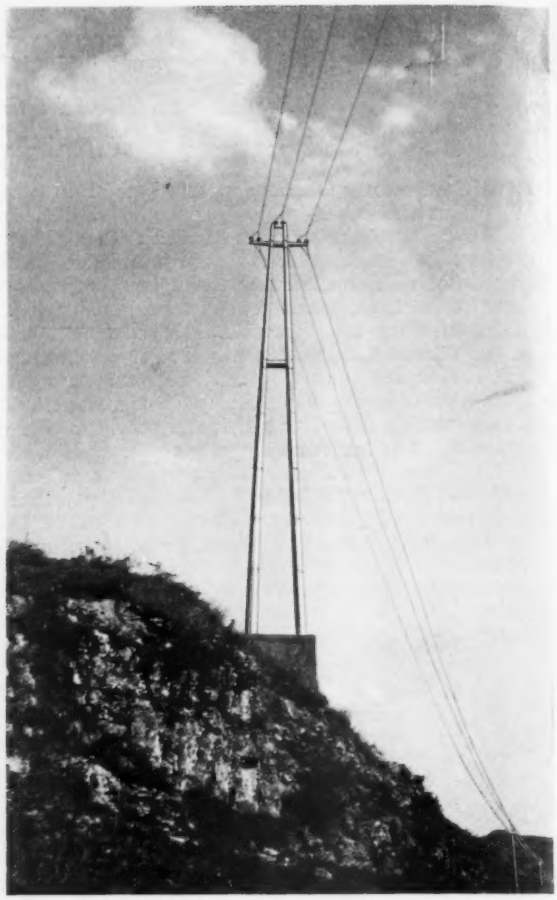
The sections are nested together, protected as necessary for dispatch. When nested, the cubic capacity of any size of pole is only that of the bottom or largest section. Thus a 50-ft. pole when nested for shipment is only 6 ft. 6 in. long, a saving of nearly seven-eighths of its original length. There is similar economy when Adastra poles are carried by road or rail. For example, a 30-cwt. motor lorry will accommodate 20 of these poles each 35 ft. in length before nesting. For breakdown work the portability of this type is an important asset; two Adastra telephone poles can be carried with ease in the sidecar of a motor-cycle. Storage problems are also simplified, for 300 poles can be stored under cover in a space 6 ft. 6 in. long by



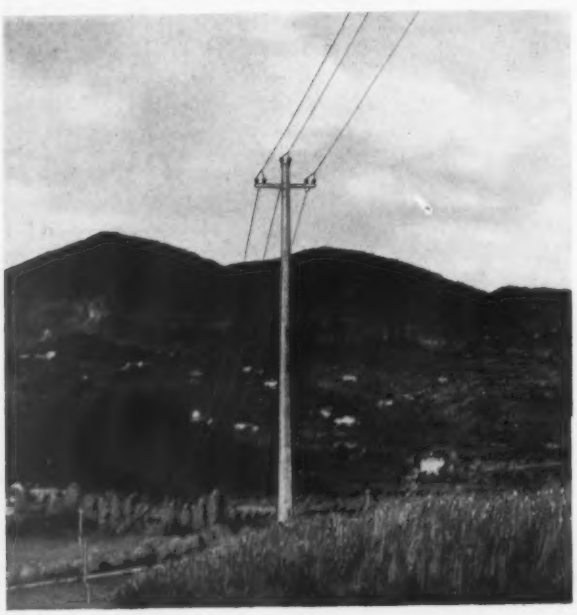
An impression of the variety of types in which Adastra poles are available is given in the above illustrations



Adastra pole, type 37, carrying four 0·1-inch conductors of l.t. line



"Duo" type of pole in a difficult location



Adastra poles carrying electric lines across a valley

10 ft. wide by 5 ft. high. They can all be man-handled—a man can easily carry a 30-ft. pole. The standardisation of Adastra poles also minimises stock.

Ease of Erection

The installation of an Adastra pole is very simple; upon arrival at the site the sections are withdrawn from the nest and assembled by telescoping them together. They are tightened by the use of a simple device consisting of a steel cable and screw straining gear operating through the centre of the pole. The sections are pulled together until the pole is of the specified length, the overlap at the joints being approximately equal to the major axis of the section. The fittings are then mounted, and the pole is ready for erection. If the cross arms or brackets are of the Adastra tubular sleeve type, their assembly is a matter of seconds—they are merely slid over the top of the pole and are firmly and accurately located on the tapering pole section. One man, unaided, can transport and erect a 35-ft. pole without equipment, whilst a case is on record where two men removed a 35-ft. wooden pole and replaced it with one of the Adastra type in the space of 45 minutes, including the changing of the conductors. Another case refers to the erection of a mile of high tension poles by eight men, without tackle, in five hours.

The elliptical cross-section of the pole is a feature which will commend itself to engineers. An elliptical pole has long been sought, but hitherto for various manufacturing reasons has not been made available. The long

or major axis is set transversely to the line of route, except in the case of terminals, so that not only is the strength where it is most required, *i.e.*, in the direction of the pull, but the streamlined shape reduces considerably the projected area and, consequently, the wind pressure on the pole in this direction. A circular pole induces over 40 per cent. greater wind load than an elliptical one of equal strength. In service, Adastra poles have demonstrated various qualities inherent in their design. Some of these are :—

1.—Tests to destruction show that the joints are the strongest part of the pole.

2.—Even when crippled the pole does not collapse, and will continue to carry a substantial load until repaired.

3.—When a pole is crippled through any accidental cause, it is necessary to replace only the damaged section, and the remainder of the pole is salved.

4.—The temporary deflection under load is much lower than with most other types of steel pole, but sufficient flexibility is provided to minimise the shock in the event of broken wires.

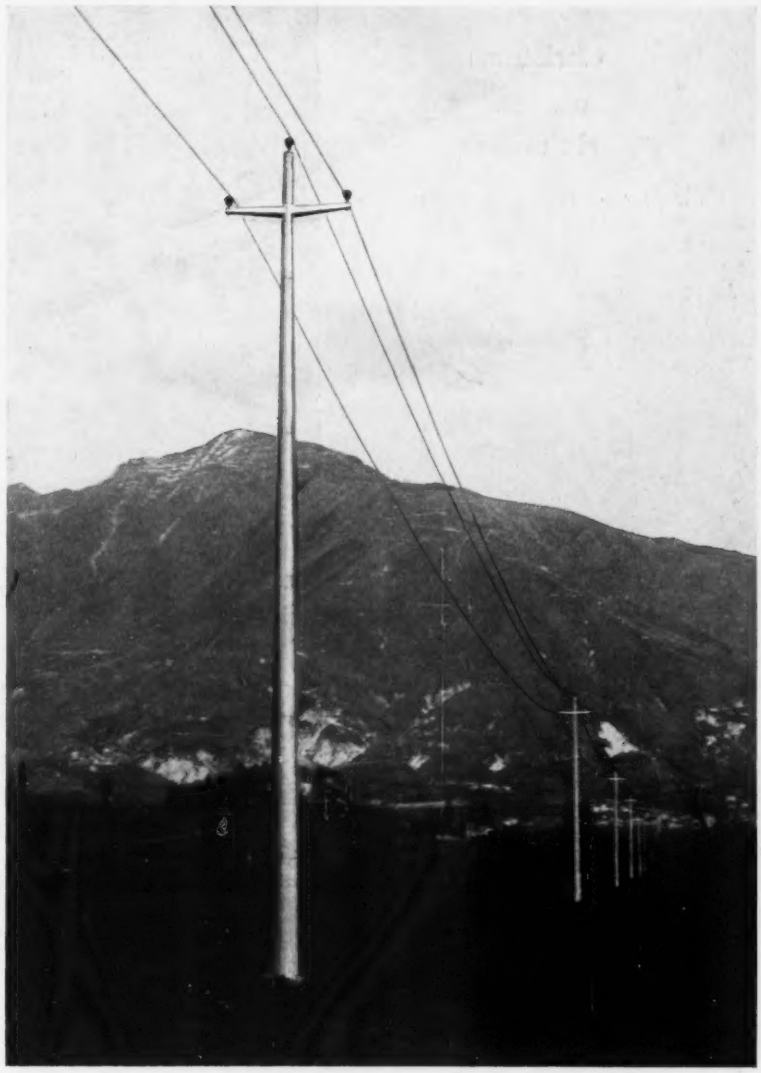
5.—The pole does not, under heavy loading take a permanent set. When stressed to the elastic limit of the material, the pole will buckle, and as all calculations are based upon the crippling point of the structure, rather than on the ultimate tensile strength of the steel, the factor of safety can be assessed to a correspondingly greater degree of accuracy.

6.—The scientific design provides for the gradual dissipation of deflection over the length of the pole above ground to the point of complete dispersal at the ground level, so that the foundations remain undisturbed, and accurate setting with safety is assured.

7.—The tapered shape of the open butt end of the pole has the effect of wedging itself firmly in the ground, so that not only is the depth of setting less than with other types of pole, but base plates are rendered unnecessary save in exceptional circumstances.

8.—Torsional tests have demonstrated a high degree of efficiency in this direction. In one test the cross-arm was subjected to an unbalanced load which twisted it through 90 deg. in the horizontal plane. When the load was released the cross-arm returned to its original position and the pole was found on examination to be quite intact.

9.—Internal condensation is minimised by an ingenious arrangement of the welded seams which results in a current of air passing through the apertures so formed and finding an outlet through the louvred finial caps. This patented feature is exclusive to the Adastra pole.



The lightness and portability of Adastra poles facilitate the distribution of electric power in mountainous districts

10. The use of stays is greatly reduced on small angles by adjusting the major axis to the changed direction.

Early Locomotives and Adhesion

Since the publication (in our issue of August 6 last) of an editorial article entitled "125 Years of Railway Locomotives," our attention has been drawn to two interesting early references tending to show that the views therein expressed regarding the introduction of practical steam locomotion on railways were accepted by certain prominent engineers in very early years. That the pioneer work of the Leeds—Middleton colliery railway was recognised, is shown by the following extract from a letter written in 1824 by William Chapman to Sir James Graham on the subject of forming a communication between Newcastle and Carlisle: "The first *useful* introduction of locomotive engines was by Mr. John Blenkinsop on the railway from Middleton Colliery to Leeds." Regarding the adhesion of a flanged wheel on a smooth rail, in "Public Works of Great Britain," edited by F. W. Simms, and published in London in 1838, the section devoted to locomotives begins: "It was many years after the first attempt to apply steam to the purposes of locomotion before it was satisfactorily ascertained that the adhesion of the wheels of an engine upon the rails was sufficient to effect its progression; and many contrivances of various degrees of ingenuity were brought forward to produce locomotion without the aid of adhesion at all. It was in 1813 that Mr. Blackett, of Wylam, had an engine constructed which worked by the adhesion of its wheels on the rails only. His railroad was a plate rail, and would, consequently, present more friction or resistance to the wheels than an edge rail; and, on that account, the amount of adhesion would be greater than upon the latter rail. Still the credit is due to Mr. Blackett, for proving that the locomotion could be applied by that means alone."

XUM

Christmas on the Railways

(*See article on page* 1268)

The aerial Christmas decorations at Paddington station, G.W.R., with mammoth candlesticks around the pillars on the Lawn. Alongside is seen in detail the pleasing tableaux suspended from the roof

Left : The booking hall, St. Pancras station, L.M.S.R., showing the ticket offices transformed into an olde worlde cottage, and Santa Claus departing hurriedly to his next call

Right : Seasonable decorations at Euston station, L.M.S.R.; even the cow has succumbed in fabulous fashion to the spirit of Christmas

Left : Santa Claus arriving at Euston station, L.M.S.R., where the seat reservation office in the Great Hall has been suitably transformed for his reception

XUM

Above : Control room, York

Right : Control room, Newcastle

Below : Controller's desk, Newcastle

EXTENSION OF TRAIN AND TRAFFIC CONTROL, L.N.E.R. (*See article on p.* 1249)

RAILWAY NEWS SECTION

PERSONAL

NEW L.M.S.R. DIRECTORS

Sir Robert Burrows, of Prestbury, Cheshire, and Sir Robert Blyth Greig, of Barnton, Midlothian, have been appointed directors of the L.M.S.R.

Sir Robert Burrows, who is a J.P. for the County of Lancaster, was educated at Leys School, Cambridge. He is Chairman of Lancashire Associated Collieries, Vice-Chairman of Manchester Collieries Limited, and was one of the founders of the Lancashire and Cheshire Coal Research Association, of which he was the first President from 1918 to 1928. He was a member of the Fuel Research Board from 1923 to 1927, and is a past Vice-President, Institute of Fuel.

Sir Robert Blyth Greig has been a member of the L.M.S.R. Scottish Committee since 1924. He was Permanent Secretary of the Department of Agriculture for Scotland from 1929 to 1934, and has been Lecturer on Agricultural subjects in Cheshire, Newcastle, and Aberdeen, as well as Staff Inspector in Agriculture of the Board of Education at Whitehall. Sir Robert was also a member of agricultural commissions to Canada and Australia. During the war he served in France, in the Royal Scots, and is the author of numerous publications on agricultural subjects. He is a Carnegie Trustee, and a member of the Livestock Commission and Bacon Development Board.

Sir Josiah Stamp, Chairman and President of the Executive, L.M.S.R., and Lady Stamp, left London on December 23 for Australia, where they are to be the guests of the New South Wales Government for the 150th anniversary of the founding of the Commonwealth.

Sir Felix J. C. Pole, Chairman of Associated Electrical Industries Limited, is leaving today on a business visit to South Africa.

Mr. W. Tyrrell, the only survivor of the original Board of Trustees of the Railway Convalescent Homes, has, on account of advancing age, decided to resign from his trusteeship as from the end of 1937. In view of his long and intimate knowledge of this work, the trustees have elected him Vice-President of the Homes for life. In this way they hope to maintain contact with Mr. Tyrrell and benefit by his counsel and advice.

Mr. William Bishop, who is retiring from the position of Chief Solicitor, Southern Railway Company, is the eldest son of the late Mr. Joseph Bishop, of Abergavenny, who was a chief officer of the former London & North Western Railway. Mr. W. Bishop was articled to Mr. Richard Baker-Gabb, of the firm of Gabb & Walford, Abergavenny, in 1879. Immediately after being admitted a Solicitor, he joined the late Mr. Charles Mason, the then Solicitor to the London & North Western Railway, in November, 1884, as an Assistant Solicitor. During the period of his connection with that company, Mr. Bishop had experience of every branch of the work of a railway solicitor's office, and in particular, Parliamentary, Railway and Canal Commission, and Common Law, including the inquiries held before the Board of Trade and the Joint Committee of Lords and Commons on the several Railway and Canal Rates and Charges Order Confirmation Bills, 1891-1893. Mr. Bishop left the London & North-Western Railway in 1903 on his appointment as Assistant Solicitor to the former London & South-Western Railway, becoming Solicitor to that railway in July, 1910, with which he remained until the amalgamation of railways forming the Southern Railway when he was appointed Chief Solicitor to that undertaking in January, 1923. An editorial note on Mr. Bishop's lengthy railway career appears on page 1238.

Photo [*Vandyk*

Mr. William Bishop

Chief Solicitor to the Southern Railway Company, 1923-37

G.W.R. APPOINTMENTS

The Great Western Railway announces the following appointments to take effect as from January, 1938:—

Mr. H. H. Phillips, Clerk, Superintendent of the Line's Office, Paddington, to be Assistant Divisional Superintendent, Cardiff.

Mr. W. H. E. Humphrey, Horse Superintendent, Paddington, to be Assistant Superintendent, Road Transport Department, Paddington.

Mr. A. E. C. Dent, Assistant to Motor Assistant, Slough, to be Motor Assistant, Paddington.

Mr. H. B. Barnsley, Goods Agent, Avonmouth, to be Chief Clerk, District Goods Manager's Office, Bristol.

Mr. F. E. Ruddick, Canvasser, District Goods Manager's Office, Bristol, to be Goods Agent, Avonmouth.

Mr. A. J. Robinson, Junior Assistant, Road Transport Department, Paddington, to be Assistant to Superintendent (Cartage), Road Transport Department, Paddington.

Mr. H. D. Case, Assistant Horse Superintendent, Hockley, to be Assistant to Superintendent (Horse), Road Transport Department, Paddington.

In acknowledgment of the many courtesies received when members visited signalling installations in Berlin during the summer meeting in September last, the Council of the Institution of Railway Signal Engineers invited Herr Reichsbahndirektor W. Stäckel, Chief Signal Engineer, German State Railway, to become an Honorary Member of the institution. Herr Stäckel, who is well known in international railway circles, and was reporter at the Madrid International Railway Congress in 1930, has accepted this invitation in most gratifying terms.

Ministerialrat Ing. Ernst R. Kaan, the Chief Electrical Engineer of the Austrian Federal Railways, has been appointed a member of the Administrative Board of the Federal Railways, with the concurrence of the Austrian Government, while still

retaining his position as Chief Electrical Engineer, to which he was appointed in 1930.

Mr. Arthur R. Cooper, who is retiring from the position of Chief Engineer of the London Passenger Transport Board, was born at Oxford in 1877, and educated at Magdalen College School. After a locomotive training at Swindon, he studied at University College, London. In 1899 Mr. Cooper was appointed an Assistant Engineer of the London Electric Supply Corporation at the Deptford generating station, and took part in the reconstruction and modernisation of that plant. Two years later he joined the engineering staff of the Central London Railway, and in 1906 was appointed by the late Sir George Gibb as Superintendent of the Baker Street & Waterloo Railway. In 1908 his duties were extended to include that of Engineer of the District Railway, and later, on the linking up of the London Underground railways his responsibility was further extended. In 1921 he was appointed Chief Engineer for the several railways, including the Metropolitan District, London Electric, City & South London, and Central London lines. His department also included the design, construction, and maintenance of buildings for the London General Omnibus Company and associated tramways. Mr. Cooper has been responsible for several widenings on the District Railway, including the Turnham Green widening in conjunction with the late Mr. Jacomb Hood, and the electrification of the East London Railway in conjunction with the late Sir Percy C. Tempest and Mr. W. Willox. More recently as Chief Engineer of the Underground railways, he has been actively engaged in the large programme of new works. Mr. Cooper is a Member of the Institution of Civil Engineers, a Member of the Institution of Electrical Engineers, and a Member of the Institute of Transport. Mr. Cooper was President of the Permanent Way Institution in its jubilee year, 1934. In 1920 he acted on the advisory committee appointed by the Ministry of Transport to advise on the electrification of railways, and again on the second committee on railway electrification in 1927. On behalf of the Underground railways he has visited the United States, and has also made several Continental tours. (See also editorial note on page 1238.)

Elliott [*& Fry*

Mr. Arthur R. Cooper

M.Inst.C.E., M.I.E.E., M.Inst.T., Chief Engineer, London Passenger Transport Board, 1933-37

Mr. H. W. Moore, who, as recorded in our issue of December 10, has been appointed Assistant Mechanical and Electrical Engineer, and Signal Engineer, Northern Division, Glasgow, L.M.S.R., joined the former Lancashire & Yorkshire Railway at Horwich, and was subsequently employed as a draughtsman on traction, power and lighting work. He was then transferred to the Telegraph Superintendent's office and took charge of the electrical workshops. Mr. Moore's next appointment was as Electrical Assistant to the Chief Civil Engineer (Signal Section), Manchester, and was followed by his promotion to the position of Telegraph and Electrical Assistant, "B" Division, London & North Western Railway, as a result of the 1922 amalgamation. In 1930 he was appointed Outdoor Assistant (Signals), L.M.S.R., Derby, and in March, 1934, was transferred to Euston in a similar capacity. In 1936 Mr. Moore was transferred to Scotland as Divisional Signal and Electrical Engineer (Scottish Division), Glasgow, L.M.S.R. In his new appointment he retains his position as Signal Engineer of the Northern Division, the signalling department continuing to come under his direct supervision. Mr. Moore is an Associate Member of the Institution of Electrical Engineers and a Member of the Institution of Railway Signal Engineers, of which he is also a Member of Council; he was, moreover, Lecturer in Electrical Engineering, Mathematics and Applied Mechanics for a number of years at the Horwich Railway Mechanics Institute.

Photo [*Lafayette*

Mr. H. W. Moore

Assistant Mechanical and Electrical Engineer, and Signal Engineer, Northern Division, Glasgow, L.M.S.R.

It is with regret that we record the death on December 16, at the age of 43, of Mr. Norman A. Hardie, General Manager (Sales) of the Associated Equipment Co. Ltd. Following an operation in 1936, Mr. Hardie was compelled to undergo another operation in September last, and at that time it was confidently expected that he would make a complete recovery. The unexpectedness of his death has come as a deep shock to his colleagues

The late Mr. Norman A. Hardie

General Manager (Sales) Associated Equipment Co. Ltd., 1928-37

at the A.E.C. factory, and to his host of friends in motor transport circles at home and abroad. Mr. Hardie, who was born at Langham, in Scotland, and educated in Glasgow, was appointed Joint Manager (Commercial) of the A.E.C. in 1925, and served before the war with the Canadian Northern, and the Canadian National Railways. From 1914 until 1919 he was with the Highland Light Infantry and the Royal Air Force, and with the latter spent some time in actual flying. Upon the amalgamation of the Daimler Co. Ltd., with the Associated Equipment Co. Ltd., he was appointed General Manager of the Associated Daimler Co. Ltd. In connection with the development of the Associated Equipment Company's overseas business, Mr. Hardie travelled abroad extensively investigating new markets, and establishing and maintaining contact with distributors and prospective operators. It was while he was in Java on one of these tours that he became dangerously ill, and arrived back in England in 1929 as a semi-convalescent. In the preceding year, 1928, Mr. Hardie had been appointed General Manager (Sales) of the company. Apart from his numerous contacts in the municipal world, where he leaves many friends of long standing, Mr. Hardie was widely known for his association with the Society of Motor Manufacturers and Traders Limited. He was made a member of the council of that body in 1925, a member of the Commercial Vehicle Committee in 1926, and was elected Chairman of the same committee in 1932. This post, together with that of Chairman of the Commercial Vehicle Exhibition Committee which he first occupied in 1932, he held until the time of his death. He was also, in 1932, elected a Vice-President of the S.M.M. & T. Ltd., and became a member of the Management, Finance, and British Manufacturers' Committee. In the same year he was elected Chairman of the British Road Federation. In 1934, Mr. Hardie was elected for the third year Chairman of the Petrol Vehicle Committee of the S.M.M. & T. Ltd., a position no individual had previously held for three years in succession. Other activities in connection with the society included membership of the Marine, Tractor and Agricultural Machinery Committee. At a plenary session held in Berlin, in February of this year, he was elected Vice-President for the 1937-1938 session of the Bureau Permanent International des Constructeurs D'Automobiles. A memorial service for Mr. Hardie was held in the Savoy Chapel, London, W.C., on December 20, and the interment took place at Bognor Regis on the same day.

Among those who attended the memorial service were:—

Lord Ashfield (Chairman, London Passenger (Transport Board), Mr. E. Rawdon Smith (representing London Passenger Transport Board), Mr. A. V. Mason and Mr. J. Rutland (London Passenger Transport Board); Mr. J. Shearman (L.M.S.R.); Mr. C. W. Reeve, Chairman and Managing Director, Mr. G. J. Rackham, Chief Engineer, and Lt.-Col. J. T. C. Moore-Brabazon, Deputy-Chairman, Associated Equipment Co. Ltd.; Mr. Thomas Bower (representing Mr. R. J. Howley, President, British Electrical Federation Limited), Mr. W. S. Wreathall, Mr. A. T. Twidle, Mr. A. W. Chivers, and Mr. H. Kingsbury (British Electrical Federation Limited); Mr. H. Spurrier, Senr. (Chairman and Managing Director, Leyland Motors Limited), Mr. C. B. Nixon (Leyland Motors Limited), Mr. F. Simmonds (Chloride Electrical Storage Co. Ltd.); Mr. John Thornycroft (John I. Thornycroft & Co. Ltd.); Mr. W. H. Gray (Park Royal Coachworks Limited); Mr. H. Marshall (representing Mr. G. F. French, Maidstone & District Motor Services Limited); Mr. H. Hattersley (representing Karrier Motors Limited); Mr. C. E. Hackney (representing the B.E.A.M.A.).

Mr. J. L. Rendall, Chief Clerk in the Traffic Manager's Department, Southern Railway, has been appointed Indoor Assistant to the Traffic Manager as from January 1, 1938.

We regret to record the death on December 29, in his 88th year, of Mr. Robert Francis Charles Castleman, father of Mr. A. L. Castleman, the present District Goods Manager, Broad Street, L.M.S.R. The late Mr. Robert Castleman was a former District Goods Manager, Crewe, of the London & North Western Railway. At the time of his retirement in 1915, he was the *doyen* of L.N.W.R. officers, having completed 52½ years' service.

Presentation to Mr. Ernest Taylor

At a meeting of the accountants of the railways of Great Britain and Ireland on December 16, Sir Ralph Cope paid tribute to Mr. Ernest Taylor on his retirement from the position of Chief Accountant to the London Midland & Scottish Railway Company (*see* our issue of October 29). Sir Ralph Cope, in extending to Mr. Taylor the best wishes of his colleagues for many happy years of retirement, expressed their regret that ill-health has been the cause of removing from their midst one who had so ably upheld the traditions of railway accountancy. Mr. Taylor had filled with distinction many offices during his career, first with the Midland Railway Company, and later with the London Midland & Scottish Railway Company, and he had always been esteemed for his kindly manner. On behalf of his colleagues, Sir Ralph asked Mr. Taylor to accept, with their best wishes, a silver inkstand for himself and a handbag for his daughter. The inkstand was inscribed:—

Presented to
ERNEST TAYLOR
by Members and Representatives of the Railway Accountants' Committees,
with all good wishes, on the occasion of his retirement
from the London Midland & Scottish Railway Company,
31st October, 1937

Several members of the committee spoke in support of Sir Ralph Cope's remarks; and Mr. Taylor said that he would retain the happiest memories of his many years of railway service.

Christmas Greetings

We express our acknowledgments in the list appended for the many seasonable tokens in the form of Christmas cards, calendars, and diaries we have received this year:—

Calendars and Diaries

Associated Equipment Co. Ltd., British Insulated Cables Limited, British Thomson-Houston Co. Ltd., British Timken Limited, Bruntons (Musselburgh) Limited, Craven Bros. (Manchester) Ltd., Fischer Bearings Co. Ltd., German State Railway, J. Halden & Co. Ltd., International Harvester Co. of Great Britain Ltd., *The Locomotive, Railway Carriage, & Wagon Review*, Metropolitan-Cammell Carriage & Wagon Co. Ltd., Netherlands Railways, Railway Passengers Assurance Company, Thomas Robinson & Son Ltd., Ruston-Bucyrus Limited, South African Railways, Airways, & Harbours, J. Stone & Co. Ltd., Mr. J. W. Thornycroft.

Christmas Cards and Greetings

Associated Equipment Co. Ltd.; W. G. Bagnall Limited; Management and staff, Belgian National Railways; Chairman and Members, Port of Bristol Authority; Cable and Wireless Limited; Mr. P. A. Clews; Superintendent and staff, Cyprus Government Railway; Fischer Bearings Co. Ltd.; Gloucester Railway Carriage & Wagon Co. Ltd.; Great Western Railway—Lord Palmer (Deputy Chairman), Sir James Milne (General Manager) and office staff, Chief Goods Manager, Commercial Assistant to the Chief Goods Manager, Mineral Traffic Manager and staff, Chief Engineer and staff, Signal and Telegraph Engineer and staff, Superintendent of Road Transport and staff, Publicity Officer and staff, Divisional Superintendent (Worcester) and staff, District Goods Manager (Worcester) and staff, Major E. C. Cookson and officers of the 152nd (G.W.) Railway Construction Co., Royal Engineers, Major R. H. Edwards and officers of the 151st Railway Construction Coy., Royal Engineers; Hazell Watson & Viney Limited; Head, Wrightson & Co. Ltd.; Imperial Airways Limited; Col. Sir John C. Ward and the officers, Iraqui State Railways; the "K" Lines and Pantry Dockyard Railway (Mr. G. P. Keen); General Manager, Kenya and Uganda Railways and Harbours; Knorr-Bremse A.G.; London Midland & Scottish Railway—Sir William V. Wood, Sir Harold Hartley, Mr. E. J. H. Lemon, the Chief Operating Manager and staff, Divisional Superintendent of Operation and staff, Derby, Chief Civil Engineer and staff, Chief Accountant, District Passenger Manager, Euston, Advertising and Publicity Officer and staff; London & North Eastern Railway—Passenger Manager (Southern Area) and staff; District Passenger Manager (London) and personal staff, Continental Traffic Manager, Advertising Manager, Information Agent and staff; Lübeck-Büchener Eisenbahn Gesellschaft; Muir Machine Tools Limited; *The Mutual Magazine*; Commissioner and executive officers, New South Wales Railways; North British Locomotive Co. Ltd.; F. Perkins Limited; London Passenger Transport Board—Public Relations Officer; General Superintendent and staff, Port of Preston Authority; Commissioner for Railways and staff, Queensland Government Railways; Mr. C. E. R. Sherrington and staff, Railway Research Service; Lieut.-Col. D. J. McMullen and officers, Railway Training Centre, Longmoor; President and Officers, Retired Railway Officers' Society; Mr. W. J. Reynolds; Mr. C. P. and Mr. O. F. Sandberg; Skefko Ball Bearing Co. Ltd.; South African Railways and Harbours—the General Manager, Publicity Department, *The South African Railways and Harbours Magazine*; Commissioner and officers, South Australian Railways; Southern Railway—the Traffic Manager and his assistant; Spalding & Hodge Limited; General Manager and staff, Sudan Railways; the Superheater Company; General Manager and staff, Tanganyika Railways and Port Services; Col. W. G. Tyrrell; United States Lines. Mr. Maynard Metcalf, Canadian National Railways; Mr. E. F. Warren and officers of No. 1 Division, L.N.E.R. Police; German Railways Information Bureau; Mr. and Mrs. C. A. Muirhead; Divisional Carriage and Wagon Superintendent and staff, Old Oak Common, G.W.R.; Sir Philip and Lady Dawson.

QUESTIONS IN PARLIAMENT

Rail Warrants for Young Workers

Mr. D. G. Logan (Liverpool, Scotland—Lab.) on December 16 asked the Minister of Labour if he was aware of the great pecuniary hardship experienced by young workers sent by labour exchanges to distant jobs when desirous of returning home; and if he would take steps to issue free return railway warrants to these workers at Christmas time.

Mr. Ernest Brown (Minister of Labour): Young persons under 18 transferred under the official scheme normally receive assistance towards fares home at Christmas if they have been in the new area less than 12 months and the amount of the fares exceeds certain limits. This arrangement has been in force for a considerable period, and I have no reason to suppose that it does not do all that can reasonably be expected.

All-Steel Coaches

Mr. Tom Cassells (Dumbartonshire—Lab.) on December 22 asked the Minister of Transport if he was aware of the advantages of all-steel railway carriages over carriages constructed mainly of wood; and if he was prepared to take steps to make the universal use of all-steel coaches compulsory.

Dr. Leslie Burgin (Minister of Transport): Apart from some all-steel rolling stock, coaches of modern design on main-line railways in this country all have steel underframes, with wood, or wood and steel, bodies; they embody 75 to 85 per cent. of their weight in steel. The design of rolling stock is a matter which is constantly under review by the railway companies. My technical advisers feel that there is no justification on grounds of safety for making the use of all-steel coaches compulsory on main-line railways, nor have I any power in this respect.

Mr. Cassells: Is the Minister aware that the type of semi-steel coach to which he refers was abolished in the United States of America so long ago as 25 years ago, in Belgium the all-steel coach is universally used, and will he not be prepared in these circumstances to set up a special Government inquiry on this particular point?

Mr. V. la T. McEntee (Walthamstow West—Lab.): Is the Minister not aware that British railways are the safest in the world, and the coaches constructed of steel and wood are infinitely better than those of any other country?

Dr. Burgin: I have made it clear from the answer to the original question that I am concerned with the main-line railways in this country. This matter is constantly under review. My technical advisers take the view that the present type of coach with the greater part of it steel and with a certain amount of teak and mahogany at the end is the safest for British traffic conditions. I am satisfied that they know their business, but I am always willing to be informed, and if information is placed before me I will give it most detailed consideration.

Whalebone Lane Railway Bridge

Mr. H. Parker (Essex, Romford—Lab.) on December 22 asked the Minister of Transport whether he was aware that the railway company had now decided to accept a tender for the widening of Whalebone Lane railway bridge; that the Dagenham Urban District Council had given its approval and that the necessary loan sanction for the widening work to the embankments of this bridge was given by the same council in 1934; and when loan sanction to both parts of this necessary improvement would be given.

Dr. Leslie Burgin: Yes, Sir. The Urban District Council submitted full financial details on December 17, and these are now being examined with a view to a grant being made and a loan sanction recommended.

Anti-Aircraft Defence of Railway Centres

Mr. Alfred Short (Doncaster—Lab.) on December 22 asked the Minister for the Co-ordination of Defence, what steps were being taken to provide adequate anti-aircraft defence of munition and railway centres; whether sites for anti-aircraft guns had been surveyed and selected; and if the Territorial and Regular Forces were responsible for anti-aircraft defence.

Sir T. Inskip (Minister for the Co-ordination of Defence): I can assure the hon. member that steps are taken and appropriate dispositions are made according to the circumstances of each case, but it would not be in the public interest to disclose the character or extent of preparations for the defence of particular localities. As regards the second part of the question, the answer is in the affirmative.

Conditions of Cheap Day Tickets

Mr. Cassells (Dumbartonshire—Lab.) on December 22 asked the Minister of Transport if he was aware that railway companies in Great Britain, when issuing cheap day tickets, contracted themselves out of common law liability for payment of damages to injured persons in the event of railway accidents where fault might attach to any of their employees, thereby causing much hardship to such injured persons; and what steps he was prepared to take to remedy this injustice.

Dr. Leslie Burgin: Yes, Sir. The matter is not one with regard to which I have any statutory powers, but, as indicated in my answer to a question asked by the hon. member for Stirling and Falkirk on November 3, I am carefully considering whether there is any useful action that I can take.

Mr. T. Cassells: Is the Minister prepared in the admitted circumstances underlying this question to make the necessary recommendation to British railway companies to terminate this obviously invidious practice?

Mr. Campbell Stephen (Camlachie, Glasgow—I.L.P.): Is the Minister prepared to use his influence with the Prime Minister to give facilities for a Bill in order to make the companies liable?

No replies were given to these questions.

Kenya & Uganda Railway Staff Conditions

Mr. V. la T. McEntee (Walthamstow West—Lab.) on December 22 asked the Secretary of State for the Colonies whether, in view of the fact that the annual current revenue of the Kenya & Uganda Railway was expected to be £2,500,000, he would represent to the local government the desirability of considering improved conditions for the staff.

Mr. W. Ormsby-Gore (Secretary of State for the Colonies): The conditions of service of certain classes of the Staff employed on the Kenya & Uganda Railway have recently been reviewed by the Railway Administration and I see no reason to suggest a further review of these conditions at this juncture.

Mr. McEntee: In view of the fact that there has been a considerable increase in the revenue, will the right hon. gentleman consider advising that the cases of those members of the staff which have not been reviewed up to the present should now be reviewed?

Mr. Ormsby-Gore: To the best of my knowledge there was a comprehensive review, but if there are any individual cases that the hon. member desires to bring to my notice I shall be glad to look into them.

Castleton Station

Mr. W. T. Kelly (Rochdale—Lab.) on December 22 asked the Minister of Transport if he would inquire when the railway company intended to engage upon the rebuilding of the Castleton (Lancashire) station, in view of the danger to passengers.

Dr. Leslie Burgin: I am informed by the L.M.S.R. that a scheme for the raising of the platforms at Castleton has now been prepared and will shortly be submitted to the board of directors for approval.

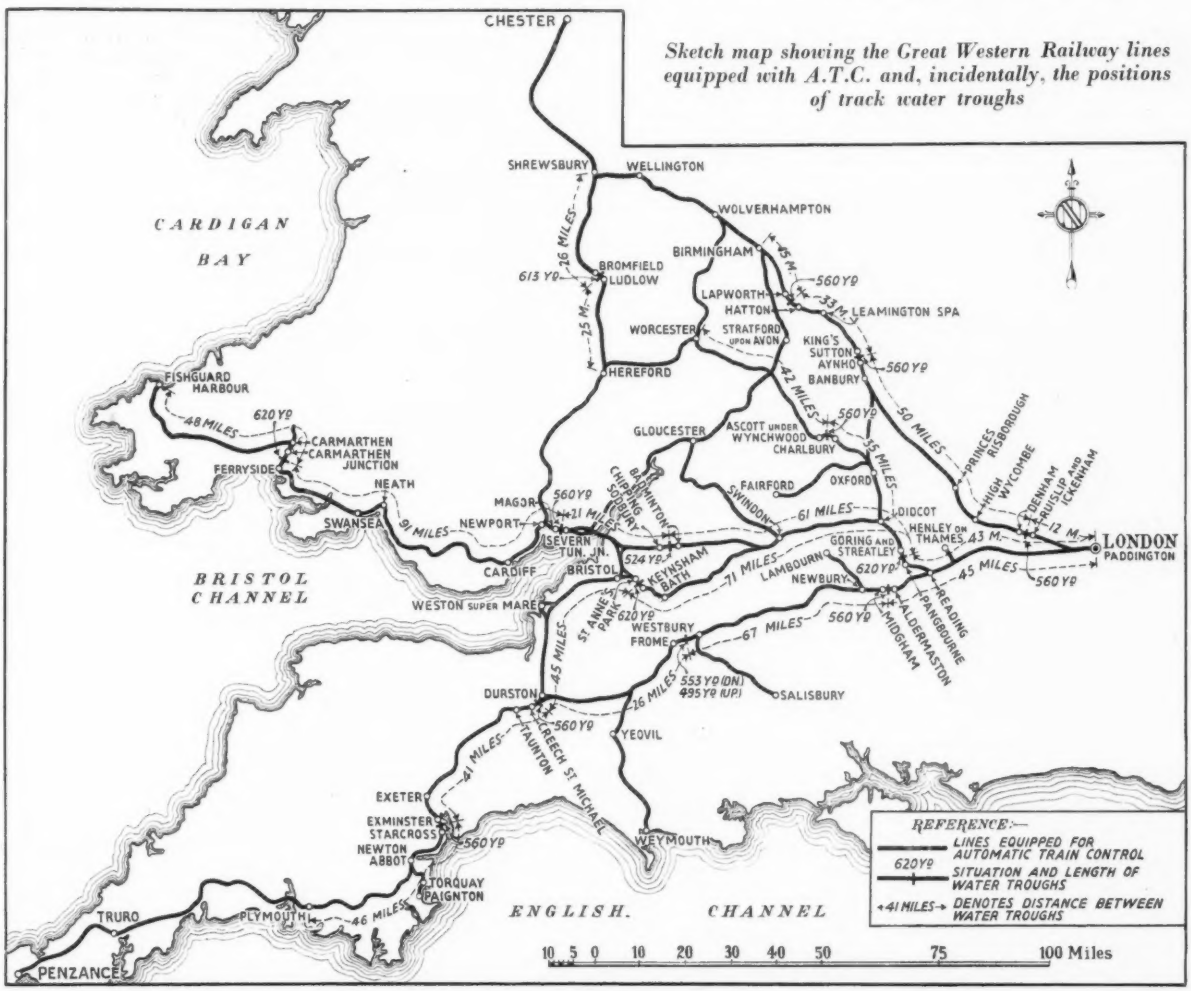
Special Trains to the Leipzig Spring Fair.—At an international meeting of railway officers in Passau, the timetables of 521 special trains have been arranged from many European countries to the Leipzig Spring Fair, which is to take place from March 6 to 14, 1938. Up to now more than 8,500 manufacturers have booked space in Leipzig and the displays promise to be very comprehensive.

A.T.C. on the G.W.R.

Rapid completion of equipment on all main-line routes

Considerable progress is being made by the Great Western Railway in the extension of its automatic train control device throughout the main-line routes on its system. The device is already in operation on some 2,600 miles of line between Paddington and Plymouth, Fishguard, and Shrewsbury; and extensions will cover the remaining 240 miles of the main-line routes to Penzance and Chester. When the Plymouth-Penzance and Shrewsbury-Chester portions are completed early in the new year, the whole of the company's 2,840 miles of main-line routes from Paddington to Penzance, Fishguard and Chester, as well as 2,900 engines will be equipped for A.T.C.

The device, which was invented by members of the G.W.R. staff, enables the engine driver to receive an audible warning in his cab as to the position of each distant signal about to be passed. A steel ramp 40 ft. long and rising to 3½ in. above rail level is fixed midway in the 4-ft. adjacent to the distant signal and connected to the signal lever electrically. On the locomotive there is an iron shoe with a T-shaped end extending head downwards to within 2½ in. of rail level. As the engine passes over the ramp the head of the T comes into contact with it and is lifted 1 in. If the signal is at "caution" no electric current passes and the ramp is dead. The lifting of the shoe opens a valve on the automatic vacuum brake apparatus causing the brakes to be applied throughout the train and at the same time sounding a syren in the engine cab. If the signal is in the "clear" position the ramp is energised and the electric current passing through the shoe prevents interference with the vacuum brake but rings an electric bell in the engine cab. Thus any failure of the electric current would be on the safety side and cause an application of the brakes and the warning syren to sound in the cab.



Sketch map showing the Great Western Railway lines equipped with A.T.C. and, incidentally, the positions of track water troughs

LONDON TRANSPORT POSTERS.—Posters in pairs have become a feature of London Transport Christmas advertising. This year the subjects are "Ballet" and "Variety," and the pictures representing each are accompanied by a second poster bearing an appropriate slogan. For ballet it is "Just a Step by Underground"; and for variety the slogan reads "Variety for a change by Underground." Needless to say, the word "Underground" is not spelt out, but represented by the familiar bar and circle device. Mr. James Fitton is the artist, and has done his work in bright colours and simple lines calculated to arrest the glance of the hurrying thousands to whom for some fifty weeks of the year the Underground stands neither for ballet nor variety, but for a semi-purgatorial period separating the joys of home and the raptures of the office. These posters will brighten their outlook.

A Christmas Welcome from the Railways

(*See illustrations on pages* 1260–1)

Christmas, once the dread excuse for the introduction of the notorious and despised Pudding to the inmates of the workhouse, and which, as is annually the wistful pleasure of the British Broadcasting Corporation to inform us, could find its way into the scaly heart of Ebenezer Scrooge, broke out with unusual vigour this year in the time-honoured halls of the great London railway termini. With the invasion of these grim monuments to industry, if not, alas, to art, the Spirit of Yuletide has progressed far. "*Hearty* Christmas Greetings to *all* our patrons, declared the L.M.S.R. through the medium of gigantic banners at St. Pancras station, adding with expansive humour, "and make this a *Farther* Christmas." Delighted with the official jest we next sought amid the gothic splendours of the station the person of the accredited vendor of railway tickets. His accustomed lair could not be recognised, however. As may be seen from the illustration, the booking office was disguised as an olde worlde cottage, though knocking on the gnarled door of this residence produced neither old Mother Hubbard nor an invitation to come inside and imbibe a nice hot cup of tea. On top of the cottage and in suspicious proximity to the chimney pot was the well-known character S. Claus, complete with the appliances of his trade. Overhead five-pointed stars twinkled in neat rows, Chinese lanterns swung to and fro with oriental languor, and Christmas trees susurrated as their branches, laden with glittering tinsels, waved in the breeze.

At Euston station another cottage, rising almost to the artistic heights of the "charming Tudor" mansions which may be ours for a small deposit in any part of London, contained not ten dimple-cheeked milkmaids, but the harassed personnel of the information bureau striving to still a hundred babbling tongues. In the booking hall were two floodlit tableaux of nursery rhymes and elsewhere were others of various pantomimes, each of which had a cunning slogan linking it with railway travel. Garlands of Pompeian splendour drooped from pillar to pillar, while balloons distended to monstrous size through the efforts of purple-faced officials gyrated with becoming dignity. Other L.M.S.R. stations decorated in a similarly gratifying manner were Birmingham, Leicester, Nottingham, Sheffield, Manchester (Exchange and Victoria), and Liverpool (Lime Street and Exchange).

At Paddington station the prominent position of the Lawn facilitated a delightful style of decorative treatment. The principal feature was a large four-sided star-shaped tableau, showing a cheerful Christmas scene, which was suspended in the centre of the area some twenty feet from the ground. Dominating this scene was a turretted castle of dour aspect, beneath which sheltered a group of cottages and an inn (recommending the consumption of "Fitzjohn's Ales") before which a stage coach had just stopped. Elsewhere there was pictured skating on the pond, gathering the Yule log, Christmas waits, and other seasonable features, not forgetting a pair of stocks—apparently a warning to those too fond of going round the corner for their drop of "Fitzjohns." The pillars of the concourse were transformed into giant candles with flames of variegated colours which glowed and dimmed by turns. The setting was completed with strings of coloured lights which twinkled roguishly, coloured leaves, lanterns advertising railway ticket greeting cards, and icicles of forbidding appearance.

Christmas greetings were conveyed to travellers on the L.N.E.R. by decorated Christmas trees at Newcastle, Tynemouth, Darlington, York, Hull, and Harrogate stations. The public had the opportunity of contributing gifts of money, toys, and other comforts for the sick and needy. Collecting boxes were provided at the trees and the whole of the contributions, either in money or kind, were distributed to local hospitals and charitable organisations. Last Christmas the response was so good that over £470 and 3,600 presents were collected.

Christmas is always one of the happiest times of the year for the 240 pupils at the Railway Orphanage, at Derby. On Christmas Day the pupils attended morning service, and afterwards sat down to the traditional dinner of roast beef and plum pudding, during which the Secretary (Mr. C. A. Moult) told them that Sir W. Guy Granet, the Treasurer, had sent them his usual Christmas gift of 6d. each, and Mr. Amand D. Charles (Bexhill-on-Sea) 3d. each. The afternoon was devoted to games, and in the evening the pupils thoroughly enjoyed an amusing film display from the new talkie-cinema apparatus kindly given to the orphanage recently by the L.M.S.R. Concert & Appeal Committee. A Christmas tree standing in the dining hall was then stripped and a present handed to each child. (The tree and gifts were presented from a collection among the L.M.S.R. staffs at Derby.)

Christmas Traffic on the Railways

During Christmas week, over 2,000 additional trains were run by the L.M.S.R. At Euston and St. Pancras alone nearly 1,000 long-distance passenger trains were handled during the five days preceding Christmas and bookings from the two London termini for the week Tuesday, December 21, to Monday, December 27, inclusive, numbered 60,922 (39,278 at Euston and 21,644 at St. Pancras). At the height of the rush, between 10 a.m. and 12 midnight on Christmas Eve, over 100 special and ordinary long distance trains left Euston and St. Pancras. In order to avoid undue delays on the main line to Carlisle and the North, the Coronation Scot was withdrawn. To cope with the enormously increased parcels traffic inwards to London, a temporary depot was established at Maiden Lane, where 37 special parcels post traffic trains were dealt with. A last-minute addition to the freight traffic from the Commercial Road (London) depot was provided by the arrival of a consignment of half a million turkeys from Hungary, which had been rushed across Europe by special trains.

Crewe station was a centre of great activity, the total number of trains arriving at this station during the 24 hours ending midnight, December 24, being 485 (249 up and 236 down). Of these, 316 were controlled expresses (159 up and 157 down). The accompanying table gives particulars of duplications of important controlled expresses which passed through Crewe during the 24 hours.

Entire absence of confusion, due to apparent effortless ease of operation

		Portions
Up Trains		
12.13 a.m.	Holyhead to Euston ...	2
7.50 p.m.	(Thur.) Aberdeen to Euston	2
10.30 p.m.	(Thur.) Glasgow to Euston	2
9.45 a.m.	Manchester to Euston ...	2
11.30 a.m.	Birmingham to Euston ...	3
12.25 p.m.	Wolverhampton to Euston	2
11.15 a.m.	Liverpool to Euston ...	2
2.0 p.m.	Wolverhampton to Euston	2
2.0 p.m.	Glasgow to Euston ...	2
2.15 p.m.	Liverpool to Euston ...	2
4.15 p.m.	Wolverhampton to Euston	2
4.10 p.m.	Liverpool to Euston ...	2
5.45 p.m.	Wolverhampton to Euston	2
5.25 p.m.	Liverpool to Euston ...	3
5.45 p.m.	Manchester to Euston ...	3
12.0 mnt.	Manchester to Euston ...	3
11.50 p.m.	Liverpool to Euston ...	2
Down Trains		
12.30 a.m.	Euston to Liverpool ...	2
12.40 a.m.	Euston to Glasgow ...	3
10.0 a.m.	Euston to Glasgow ...	3
12.5 p.m.	Euston to Crewe ...	2
1.15 p.m.	Euston to Blackpool ...	2
2.0 p.m.	Euston to Glasgow ...	2
2.15 p.m.	Euston to Birmingham ...	2
2.40 p.m.	Euston to Liverpool ...	3
2.50 p.m.	Euston to Manchester ...	3
4.0 p.m.	Euston to Liverpool ...	2
4.10 p.m.	Euston to Manchester ...	2
5.10 p.m.	Euston to Blackpool ...	2
5.20 p.m.	Euston to Preston ...	2
5.50 p.m.	Euston to Birmingham ...	2
6.0 p.m.	Euston to Manchester ...	2
6.5 p.m.	Euston to Liverpool ...	2
6.55 p.m.	Euston to Wolverhampton	2
8.50 p.m.	Euston to Holyhead ...	3
9.25 p.m.	Euston to Glasgow ...	3
11.0 p.m.	Euston to Edinburgh ...	2
Cross-Country Trains		
9.10 a.m.	Liverpool to West of England	2
3.5 p.m.	Manchester to West of England	2
3.0 p.m.	Liverpool to Birmingham	3
2.0 p.m.	Birmingham to Manchester	4
3.45 p.m.	Birmingham to Manchester	3
5.50 p.m.	Birmingham to Liverpool	3
2.10 p.m.	Bristol to Liverpool ...	3

and to the punctual dispatching and almost punctual reception of long processions of heavy main-line trains, made the lot of the passenger at Paddington enviably carefree despite the great pressure on this capacious London terminus. As recorded in our issue of December 17, arrangements had been made by the G.W.R. for dealing with some 230,000 passengers and over 700 trains on December 23 and 24. Crowds were disposed of steadily by clearly-heard instructions from an extensive loudspeaker installation. The platform staff was augmented by 100 porters. On Christmas night two special trains were run, leaving at 7.55 p.m. and 9.0 p.m., carrying Sunday papers for Ireland *via* Fishguard, and the Channel Islands *via* Weymouth, respectively. Special boat services were run in connection with these trains. Parcels traffic was exceptionally heavy. From Alfred Road depot, London, which was specially made available for this class of traffic, 87,052 bags of parcels mail were dispatched in 30 special trains, two more than last year.

Remarkably smooth working marked the Christmas traffic on the Southern Railway. Notwithstanding that 113 extra expresses left Waterloo, Victoria, Charing Cross, and Cannon Street on December 23 and 24, including eight extra Continental trains, all the arrangements were carried through without a hitch. One reason for this satisfactory result was that travel was spread over a longer period. More people went out of town before Christmas Eve this year than previously, and mail and parcels traffic was also spread over a longer period.

It was for this reason that the mountainous piles of mail bags were not seen this year at Waterloo and London Bridge stations. Another innovation brought into use this Christmas for the first time was the concentration of a large portion of the parcels post traffic at Bricklayers' Arms goods station. Here, during the period December 20 to 27, inclusive, over 8,000 bags of parcels post a day were dealt with.

As many people as ever seemed to be going away for Christmas; in fact, receipts from passenger traffic showed a slight increase. So far as Waterloo station is concerned, the number of travellers exceeded those of last year, but the electric services to Portsmouth helped to a very large extent to overcome the congestion. Large numbers of people spent Christmas on the Continent. Although winter sports traffic was heavy, yet still more people visited the Riviera.

The non-stop runs made by many of the Christmas long-distance relief trains from King's Cross, by distributing passengers evenly over the whole train service, admirably fulfilled the purpose of their innovation by the L.N.E.R. The comfortable journeys thus facilitated through the absence of overcrowding and of disturbance through the unnecessary duplication of stops at relatively unimportant intermediate stations were appreciated by those accustomed to looking upon travel at this time of the year as something of an ordeal. Distinguished Christmas travellers on the L.N.E.R. were the King and Queen and the Princesses Elizabeth and Margaret Rose, who travelled *en route* to Sandringham from King's Cross to Wolferton by the Royal Train on December 22. They were followed to Sandringham the next day by the Duke and Duchess of Kent, who left on the 11.50 a.m. from Liverpool Street. An amusing feature of the Christmas traffic was a load of animals entrained at Skegness from Butlin's circus.

Staff and Labour Matters

Railway Wages — Cost of Living Bonus

According to the *Ministry of Labour Gazette* the cost of living index figure at December 1 was 60 per cent. above pre-war level, and from Saturday, January 1, 1938, a considerable number of railway employees in conciliation grades will, by reason of the operation of the sliding scale agreement, receive an increase of one shilling a week cost of living bonus.

Engineering Apprentices' Wages

At a meeting at York on Thursday, December 23, the Joint Engineering Trade Union movement accepted the joint recommendation of the Engineering and Allied Employers' National Federation and the unions affiliated to the joint movement for dealing with the questions arising concerning apprentices, boys and youths employed in the engineering industry. It is understood that the joint recommendation, which is in the form of an agreement, has also been accepted by the Employers' Federation.

The following is a summary of the main provisions:—

Machinery of Negotiation.—The machinery of negotiation shall apply to craft apprentices and to boys and youths under 21 years of age, referred to as junior male workers. When a question arises it shall be referred to the management by the junior male worker or workers concerned and failing agreement it may be referred to the local organiser of the union. If the local organiser desires to carry the matter further he shall raise the question with the local federated association. In the event of no settlement being arrived at, it shall be competent for the union to bring the question before a local conference to be held between the local federated association and adult local representatives of the union. Failing settlement at local conference, it shall be competent for the union to refer the question for discussion between the executives of the federation and of the union.

Apprentices serving under Indentures.—Apprentices serving under indentures or written agreements between the employers and the parents or guardians are not covered by the agreement but the employers federation undertakes to recommend its members to apply to such apprentices conditions not less favourable than those conceded to other apprentices by settlements made under the machinery of the agreement.

Proportion of Apprentices to Journeymen.—The proportion of apprentices to journeymen or boys to adults, in a workshop or district shall not be subject to specific determination. This shall be without prejudice to the freedom which the unions have to raise under the provisions for avoiding disputes questions affecting the employment or interests of adult workpeople.

Fluctuations in Wages.—The wages of junior male workers shall fluctuate on a national basis at the same time as the national fluctuations in wages of adult male workers and in the following proportions thereof, according to the age of the junior worker:—

Age	Per cent.	For each 1s.*
14	16·6	2d.
15	16·6	2d.
16	25	3d.
17	33·3	4d.
18	40	5d.
19	50	6d.
20	50	6d.

* As applied to adults.

In respect of apprentices and where the apprenticeship is for a specific term of years the proportionate fluctuations shall be in accordance with this scale and ranging downwards from the maximum fluctuation in the last year of apprenticeship.

Local Wages Applications.—Claims which may involve alterations in the existing schedules of wages shall not in the initial stage be subject to local negotiation, but shall be dealt with by executives of the federation and of the union or unions concerned. The executives of the federation and the union or unions concerned may mutually agree to refer such questions for local discussion and, if possible, settlement, failing which the matter shall again come before the executives aforesaid.

Training of Junior Male Workers.—The question of training is reserved for discussion where desired between the executives of the federation and the trade union or unions who raise the issue.

Questions Raised by Adults.—Junior male workers shall not be associated with the discussion of any question raised by adult male workers under the provisions for avoiding disputes. In the event of any such question culminating in a stoppage of work, apprentices shall not be parties to such stoppage.

Stoppages of Work.—There shall be no stoppage on the part of junior male workers until the procedure outlined above has been exhausted.

Shipbuilding Industry Wages

Trade unions in the shipbuilding industry have formally lodged with the shipbuilding employers' federation a claim for:—6s. a week advance for plain time workers; 2½ per cent. on every shilling for piece workers; holidays with pay; and consolidation of bonus and wages.

XUM

The Development of Brighton

An account of progress from a fishing village to a lucrative centre of railway traffic

A fascinating paper by Mr. C. J. C. Latham, London (Central) Divisional Superintendent, Southern Railway, was presented to the Southern Railway Lecture and Debating Society in London on December 9. He pointed out that among the many coastal resorts served by the Southern Railway, Brighton occupies so prominent a place as a lucrative centre from the railway commercial standpoint that a brief historical sketch of the history of the town must necessarily prove of interest to all concerned with providing its modern traffic facilities.

Adopting as the title of his Paper "Brighton: Its Rise from Fishing Village to Queen of Watering Places" he remarked that the town was of considerably greater antiquity than was generally realised, and that as a fishing village entitled Brighthelmstone it was duly mentioned in the Domesday Book. Glimpses of Brighton as part of the estate settled by King Henry VIII on his fourth wife, and as the point from which the future King Charles II escaped from English soil to his nine-year exile, were among various instances quoted to show that Brighton had played its part in history long before Dr. Richard Russell recommended "repeated immersion in the saline waters of the ocean" and so started Brighton on its career as a health resort.

The next era began with the visit on September 7, 1783, of the Prince of Wales (afterwards Prince Regent and finally King George IV) which resulted in the conversion of "a small ill-built place on the sea coast" into the capital of fashionable Europe. Mr. Latham named the three greatest benefactors that the town ever had as Dr. Russell, the Prince Regent, and the railway company. Before the coming of the railway, however, transport between London and Brighton by stage coach had assumed no inconsiderable proportions. An advertisement in the *Sussex Weekly Advertiser* of 1756 shows the coach service as taking two days on the journey, but improved road construction and the production of lightly-built highly-sprung mail coaches resulted in a one-day coach service being inaugurated in 1762.

The "City Limited" in 1823

At the end of the Regency period there were over fifty public vehicles on the Brighton road, including night mail services, and the average journey time was then reduced to 5¼ hours. The usual fare was from eight to ten shillings outside, and fifteen or sixteen shillings inside. One particularly interesting feature of this period is described by William Cobbett in his celebrated "Rural Rides," in which he tells us that in 1823 certain London business men actually took to living at Brighton with their families and travelling up to London every morning. "So," said Mr. Latham, "you will see our much-vaunted City Limited express is no new venture, although I shudder to think what our season ticket holders would say if they were asked to spend ten hours a day travelling!"

Promoting the Railway

The King finally left the town in 1824 and it then ceased to be the centre of fashion and began to assume an air of departed glory. This period of decline lasted for nearly twenty years; until, in fact, salvation came from the railway company. As early as 1823 a project was afoot for connecting Brighton with the Metropolis by means of a railway, but nothing came of this first venture except rival schemes, and it was fully a dozen years before anything in the nature of a practical proposal was placed before Parliament. Actually, some half-a-dozen separate projects were examined by various Parliamentary Committees, and the scheme of Sir John Rennie having finally won the day, less than a month after the youthful Queen Victoria's accession to the throne Royal assent was given on July 15, 1837, to the Bill. On March 19, 1838, work was begun on the London & Brighton Railway.

Engineering Works

The Act provided for acquisition of the already-existing London & Croydon Railway Company and for a line from Croydon to Brighton, with a branch thence to Shoreham. Powers were also included for a further branch to Lewes and Newhaven, although this came later. The Engineer responsible for the actual constructional work was John Urpeth Rastrick; unfortunately no portrait of him is known to exist. He hailed from Stourbridge and, like many of the early railway makers, he aspired to both the mechanical and civil branches of his profession, for while he was responsible for the graceful iron bridge which still spans the Wye at Chepstow, he was likewise one of the judges at the famous Rainhill locomotive trials (where Stephenson won renown with his *Rocket*) and also produced the *Stourbridge Lion*, the first locomotive in America. It is to Rastrick that we owe the Merstham, Balcombe, Haywards Heath, Patcham, and Clayton tunnels (the last-named with its picturesque castellated northern entrance) and the famous viaduct of 37 arches over the Ouse valley.

The constructional work was pressed forward with all speed, for the directors knew full well that no dividends would be forthcoming until everything was in going order, and haste was accordingly the order of the day. So keen indeed was the desire for revenue return that the promoters elected not to delay opening until the whole line was ready, and the branch from Brighton to Shoreham having been completed by the spring of 1840, the necessary engines and rolling stock were brought round by sea, and it was accordingly arranged that this section should be opened for traffic on May 11, 1840. So another landmark in the history of Brighton was attained when the first railway train left for Shoreham. The whole town was *en fête*; brass bands played at the station all day long; and it is recorded that "multitudes flocked to the terminus to witness the modern miracle of transport by steam." On July 5, 1841, trains started to run from London as far as Haywards Heath, and finally, on September 21, 1841, sixteen months after the opening of the Shoreham branch, the first train made the journey from Brighton to London.

One curious engineering detail of the new line was its gauge, for when first laid this was 4 ft. 9 in., or half an inch wider than the modern standard. Another feature was that the trains themselves were unlighted, the tunnels being whitewashed throughout and lighted by gas. This provision was made, we are told, with a dual purpose in mind, for not only were "confidence and cheerfulness installed in passengers, but drivers were enabled to see through the tunnels to the other end"! The Brighton Railway at this time had no London terminus of its own, for although, in accordance with the Act, the London & Croydon Railway was to be taken over and form part of the new undertaking, the London & Croydon Railway itself had no London terminal point, but joined the Greenwich viaduct near Corbetts Lane, and thus the old London terminus of the Greenwich line (on the site of the present London Bridge Low Level station) had to serve for the Greenwich, Croydon, and Brighton routes. At Corbetts Lane Junction was erected, in 1839, the first signal box in the world.

The Board Room at Brighton

As the new railway possessed no London station, the headquarters of the company were constituted at Brighton and many have wondered that the title was not the "Brighton & London Railway." The building which still stands between the concourse and the forecourt at Brighton station was the original office headquarters of the company, and Mr. Latham said that when he was appointed Divisional Operating Superintendent for the newly formed Southern Division at the time of the railway amalgamation in 1924, the ornately decorated room he occupied was none other than the former board room of

the London & Brighton Railway. It is at present occupied by Mr. C. V. Hill, Divisional Engineer. Sir Rowland Hill, the well-known statesman of penny postage fame, was at one time Chairman of the company and took up his residence at a house in Hanover Crescent, Brighton, where a mural tablet commemorates the fact.

An extension of the Shoreham branch as far as Worthing was completed in 1845, another to Chichester in 1846, and a line to Newhaven was opened in 1847; while the title London, Brighton & South Coast Railway, which lasted, of course, right up till the railway amalgamation, was adopted in 1846, after which date the official headquarters of the company were transferred to London. The branch line to Lewes and Newhaven was productive of a feature which still constitutes one of Brighton's most familiar landmarks, namely the imposing and graceful brick viaduct of outstanding height over the London Road valley.

The timetable of 1854 shows that the 8.45 a.m. Brighton to London train, now known as the City Limited ran in those days, and when the old-time conditions are contrasted with modern-day train operation, the journey time of an hour-and-a-quarter was a very creditable performance. The last 10¼ miles from Croydon were scheduled to be covered in 13 min., or slightly *faster* than with the present sectional timings. The guards' journals, however, have not been preserved, so we cannot ascertain whether or not this schedule was ever kept. It was on Easter Monday of 1854, that the first excursion was run from London to Brighton. It is recorded that on this occasion the train comprised no fewer than 57 coaches hauled by six engines, and took 4½ hr. to do the journey to Brighton. Railway activities on Bank Holidays even under modern conditions, can certainly not show an electric train of 57 coaches!

Recent Developments

Under the railway managership of Sir William Forbes the town enjoyed a first rate train service and on November 2, 1908, the daily all-Pullman train was inaugurated between Victoria and Brighton which was for many years known as the Southern Belle and recently has been renamed the Brighton Belle. Electrification to Brighton was proposed during Sir William Forbes's *régime* in pre-war days as the alternative to the excessively expensive quadrupling of the line beyond Balcombe Tunnel junction; this was to have been on the alternating-current single-phase overhead system.

After grouping under the Southern Railway, both power signalling and electrification were introduced, but on different systems from those contemplated before the war. The new colour-light signalling at Brighton involved the abolition of six signal boxes, namely, Brighton South (which alone contained 240 levers) Brighton West, Montpelier Junction, Lovers Walk, New England, and Holland Road. The whole of the signalling work was concentrated in a new power signal box on the east side of the line just outside Brighton station, which comprises three frames with an aggregate of 225 miniature levers; the six manually-operated boxes which were superseded contained a total of nearly 600 levers. The whole of this re-signalling was brought into service on Sunday, October 16, 1932, some eleven weeks before the introduction of electric train services, namely, January 1, 1933.

Some Statistics of a Great Railway Company

Abstract of a paper read by Mr. G. Morton, Chief Accountant, L.M.S.R., to the Harrow Rotary Club, on December 10

The Times recently stated that about 200 people stopped passenger trains on British railways in one year by pulling the communication cord. In that connection I may remind you of the case in which the communication cord was pulled on a Great Western train when a bride and bridegroom were setting off on their honeymoon—the train had gone only a short distance when the communication cord was pulled by the distressed bridegroom because the bride was choking with confetti!

Another statistic which may interest you is that on the L.M.S.R. in one year no fewer than 720,000 new lavatory towels are purchased, but what proportion of that large total of 720,000 —or about 2,000 a day—is due to wear and tear, and what proportion is due to there being so many people whose initials must be "L.M.S." and therefore think the towels are their own property, I am unable to calculate.

Whilst on the matter of linen, there is another statistic which may impress some of you. It is that in one year we wash over 35 million pieces of linen at the laundries owned by the railway company, this linen consisting of such things as table-cloths and towels.

The staff employed by the L.M.S.R. at present totals approximately 230,000; it is startling to find that the killed and injured on the roads of this country in a year is about equivalent to this huge number of employees. The L.M.S.R. for 1936 paid something like one million pounds in rates, and this figure is only half what it was up to the time we secured the new *cumulo* valuations for the railway companies. On the L.M.S. system we have to deal with some 3,000 parishes in all, so that the question of paying rates is no sinecure.

Fuel costs connected with the steam locomotives were last year of the order of 4½ million pounds, from which it is calculated that this is equivalent to full-time employment for over 18,000 colliery workers throughout the year, and our payments for water were in the region of £325,000. The number of sleepers we used was over 1½ millions, and the number of tons of steel rails something like 100,000 tons; the total purchases of iron and steel amounted in value to over £2½ millions. I do not think there are many commodities which are not included in the list of the company's purchases, and the following are examples, selected at random, which may give some idea of the wide range of commodities required:—

	Purchased by L.M.S.R. 1936
Pins	72,000 packets.
Petrol ...	About 3 million gallons.
Hay	22,000 tons.
Maize and oats ...	17,000 ,,
Bricks	6 million
Clothing	Value £213,000.
Soap	1½ million lb.
Sponge cloths ...	68,000 gross.
Carrots for provender	90 tons

We are therefore very large purchasers of stores and equipment, and consequently an important factor as regards the stability of trade in this country. We print about 5 tons of tickets every week, representing about 5 million pieces of cardboard, and even when the ticket is given up at the end of the journey that is not the last heard of it, because the cardboard is then sold to be pulped for making paper. The capital expenditure represented by the L.M.S.R. Company is no less than £454,000,000. To count such a staggering figure, assuming that one counted at the rate of £2 sterling per second, would take a single individual somewhere in the region of 7 years, working for 24 hours of the day, including Sundays. Other figures and statistics affecting our company which may be less familiar are:—

Total salaries and wages paid ...	£39,500,000
No. of houses owned by the company	23,000
No. of steamboats	47
No. of nautical miles by the steamers	727,000
No. of docks and harbours ...	24
No. of hotels	31
No. of canals	12
No. of horses	8,400
No. of motors and horse carts ...	20,000
Gallons of milk conveyed	62,300,000
Total wagon miles (millions) ...	2,000
No. of passenger stations and halts	2,390
No. of goods stations	2,900
No. of private sidings	3,800

Our gross receipts for 1936, railway, road transport, steamboats, canals, docks, hotels, and air transport, amounted to nearly £73,000,000, whilst the corresponding expenditure was £59,000,000, or taken together, a total of £132,000,000. Our net revenue for 1936 was in the region of £14,000,000; the interest and dividends paid per cent. of capital receipts during that year was 3·28.

XUM

The Working of Special Traffics

Before a full house of the G.W.R. (London) Lecture & Debating Society on December 2, Messrs. D. H. Hawkeswood (Chief Goods Manager's Office) and F. G. Dean (Divisional Superintendent's Office, Paddington) gave papers on "The Working of Special Traffics," under the chairmanship of Mr. A. Maynard, Chief Goods Manager.

Mr. Hawkeswood said the first example which invariably required special arrangements for its transit was seasonal traffic. The problem in conveying such traffic, which consisted of Broccoli from Cornwall, France, and Devon; spring cabbage from Cornwall; Channel Islands tomatoes and potatoes; Worcester fruit and vegetables; and sugar beet, was that of knowing in advance the probable traffic which would pass and providing the rolling stock and services to carry it. It was the function of the Goods Department to be able to tell the Traffic and Locomotive Departments what traffic could be expected, so that special trains could be run if necessary. For instance, as the broccoli traffic developed, the 11.30 a.m. special from Ponsandane Sidings which lifted traffic for London, Birmingham, and South Wales ran on 129 days last season, and in as many as four parts. Cornish broccoli was the heaviest of the seasonal produce traffics (excepting sugar beet) and in 1936–37, 36,287 tons were conveyed.

Every seasonal traffic had its peculiar problem. For example, when produce came from the Channel Islands the grower did not want his traffic loaded first in the boats, since this meant that it was unloaded last at Weymouth, and it was important that produce should reach markets early the next morning. Sugar beet traffic from the Allscott and Kidderminster factories was unique in that it passed under a permit system designed to regulate the flow of beet to the requirements in the factories, which complicated the station work and necessitated special wagon supplies and clearances. Out-of-gauge consignments and special loads needed great care and extraordinary precautions. When some diesel railcars for an Argentine railway were recently conveyed from Handsworth to Newport, they had to be traversed at seventeen points. Twenty minutes were allowed for each traversing movement, and the journey took 17½ hr. continuous working. An interesting example of traffic dispatched regularly in large consignments was the weekly supply of over three million copies of the *Radio Times* from Waterlow & Sons at Park Royal. Of this alone, the G.W.R. share was 5,000 packages weekly, and full wagon loads were made to 127 stations.

Mr. Dean, speaking for the Traffic Department, said that great ingenuity was needed to deal with special traffics. Under the special seat reservation arrangements, 22,966 seats were reserved at Paddington for August Bank Holiday alone. A device which had been very useful was the numbering of trains, which indicated immediately to operating staff *en route* the starting time, destination, and the number of parts in which the train was running. Large organised excursions, such as the recent *Rochdale Observer* outing to Windsor requiring 13 trains conveying 5,824 passengers, also called for special timing and strict punctuality. In the same class were the educational excursions to London, Stratford-on-Avon, and elsewhere, and on one day in May this year there were as many as 140 motorcoaches in and out of Paddington. Many special trains were also required to take newspapers announcing the result of such big sporting events as the recent Louis *v.* Farr fight. Such trains had to be scheduled, too, to carry ocean liner traffic which had developed in recent years through Plymouth; and if the visitors were wise they went on one of the conducted land cruises.

A new kind of traffic arose from the show trains which had been fitted up by, for example, J. S. Fry & Sons, and Imperial Airways, and which, after special schedules had been agreed, were moved between important towns by night. The traffic of livestock and impedimenta to agricultural shows was frequently complicated by the fact that much of it proceeded to another show instead of returning home. Race-horse traffic was one of the most important, since the G.W.R. served 25 courses and 125 racing establishments. Special timetables were prepared, and the traffic was fostered by the introduction of such services as the stable-to-station road horsebox.

Another kind of consignment for which special precautions had to be taken, and train schedules arranged to give delivery early the next morning, was perishable goods such as flowers from Scilly, Penzance, and Guernsey to the extent of 6,000 tons a year. "Flower expresses" were run composed of special ventilated wagons which permitted a current of fresh air. Other perishable goods, meat, fish, and, in large quantities, ice cream, were specially protected in the vans by refrigerants such as Drikold. A complete change had also taken place in the conveyance of milk from the West Country and South Wales, consequent upon milk tanks holding 2,000 to 3,000 gal. replacing churns. Where necessary a special road-rail tank had been introduced for this traffic, of which the Swansea Division alone sent approximately 20 million gal. annually.

Steel Making on the Screen

A demonstration of 16 mm. industrial films was given by the United Steel Companies Limited at its London offices on Friday, December 10, when representatives of the press and of the industries concerned were invited to be present. The films were exhibited by Mr. A. W. Swan, of the Publicity Department, who also explained, in a running commentary, the various processes illustrated. The principal films included in the demonstration were: The mining of hematite iron ore at Beckermet, Cumberland; Workington hematite pig irons; and the making of Appleby plates.

The titles of the films are almost sufficiently indicative of their subjects, but it may be added that the demonstration formed a pictorial epitome of the whole process of steel making from the getting of the iron ore in the mine, through the different operations, to the final delivery on railway wagons of the steel plates and rails. Some of the films were in black and white and others in the Kodachrome natural colour. The pictures in colour were a veritable revelation of the possibilities of this form of photography as applied to the demonstration of industrial processes. The pictures of cascades of molten metal being ladled out in giant spoonsful, as it were, with a succession of all the tints assumed by the fluid steel through the different processes, from almost blinding white through all the shades to glowing red, were extraordinarily impressive and even beautiful. Impressive also was the colour presentation of masses of red glowing slag being dumped into the steel wagons, photographed from a point at what appeared to be in almost dangerous proximity to the object. Another very fine example of the use of colour in these films was the picture of the cooling billets, in varying shades of glowing red, while to the railwaymen the rolling of rails in the same film, was particularly interesting. The technical details of the processes illustrated by the films were explained by Mr. A. W. Swan, who was also personally responsible for the photography.

ST. ANTON CABLE RAILWAY OPENED.—The twelfth mountain cable railway in Austria was opened on December 19 by the Chancellor, Herr von Schuschnigg, at St. Anton, the Tirolese village in the Arlberg. The new railway, which is 1·6 miles long, carries skiers some 2,500 ft. above St. Anton (and nearly 7,000 ft. above sea level) in about 8 min. The present terminus is near the Galzig summit. St. Anton stands 4,275 ft. above sea-level, and the actual Galzig summit is 2,900 ft. higher. Subsequently, the line is to be extended for another 1,660 ft. to the summit of the Valfager, and this extension is expected to be ready for use in December, 1938.

Scottish Accident Inquiry

(Further details of public evidence—see also page 1224 last week)

Just as we were closing for press with our issue of December 24 we received a brief report of the public evidence given before Lt.-Col. A. H. L. Mount, Chief Inspecting Officer for Railways, Ministry of Transport, in his official inquiry into the Castlecary collision, opened at Edinburgh on December 16. As considerable prominence has been given to the evidence regarding steel coaches submitted by Sir Nigel Gresley, we now append a verbatim report of part of his statement which was severely condensed in our account last week:—

"What are generally known as steel coaches can be classified under two heads; those for which steel is used for the framing and for the panelling of the body, in substitution for wood—that is the first lot—and, second, the heavy steel coach which has steel bodies with collision compartments and special reinforcement at the end. Those bodies are largely used on American coaches, to a limited extent on the Continent, and not at all in England. These coaches are approximately double the weight of the ordinary steel-frame light steel construction for bodies, or wood construction for bodies. As you have seen, Sir, from the photographs I have shown you, the impact of this train with a heavy engine of 150 odd tons and 300 tons of carriages running into the back of the Dundee train was such that it completely twisted round the very heavy angles and channels of the underframe. If the pillars had been made of steel angles instead of teak, and if the panels had been made of $\frac{1}{16}$-in. steel plates instead of the $\frac{3}{8}$-in. teak, it is quite evident from the result of the collision that those little steel members would have had no chance whatever of withstanding the awful impact, because the great heavy steel underframe was completely bent up and a number of light steel members in the body would have had no retarding effect upon the crash of the great engine into the back of the train. I want to make that quite clear."

Mr. G. A. Musgrave, Locomotive Running Superintendent, Scotland, in the course of the public inquiry, said that the two leading coaches of the Edinburgh express completely overran the locomotive, which was stopped on its side embedded in the embankment and covered with wreckage, and were lying diagonally across the line with their ends interlocked. The third coach was resting on the top of the engine and the fourth had been lifted from the rails, but its rear bogie remained thereon. The remaining four vehicles were only slightly damaged. The standing Dundee train consisted of seven passenger vehicles with a fish van in rear. This and the two coaches ahead of it were totally demolished and the next coach was underneath the leading coaches of the Edinburgh train, seriously damaged. The remainder suffered no material damage. Rescue work proceeded amid great difficulties and he had fires lighted to facilitate matters. Damaged woodwork was used to keep them up.

Mr. G. Mills, Divisional General Manager, Scottish Area, said there were thought to be about 108 persons in the Dundee train, and from 193 to 203 in the Edinburgh train. In the former 22 were fatally injured, in the latter 13. There were 109 in the official list of injured.

Evidence concerning the state of weather was given by several railwaymen.

J. Carns, driver of the 3.41 p.m. passenger train, Polmont to Glasgow, said it was snowing hard as far as Croy, where he was stopped owing, so his fireman learnt in the signal box, to a delay caused by difficulties with a lockbar at Gartshore. Snow had settled on the signals; he saw the light of only one and had to work to the arms. There was a little daylight left. He had never experienced a much worse night. Visibility at Castlecary, where all the signals were snowed over, was 300 to 400 yd.

W. Macdonald, driver of the goods train preceding the Dundee train, could not see the Castlecary signals until he was right on them. No lights were visible. At Dullatur East the fireman, C. Smith, went to the signal box and learned of the preceding train being held at Croy and later that the Dundee train had wrongly entered the section. He ran and told his driver to draw into the loop.

T. Bell, ganger, arrived at Castlecary about 3.50 p.m. and cleaned rodding and wires until 4.30 p.m. There was only a little snow on the signal arms and practically none on the spectacles of the distant. It was his duty to remove snow when necessary.

H. Harrison, a lengthman, said there was very little snow on the arms; and J. Aitken, another lengthman, who passed Castlecary down distant at 5.30 p.m., said it had stopped snowing about 3.0 p.m. and he could see the signal for about $\frac{1}{2}$ mile. This was supported by D. Fairns, another permanent way man, who said the paint on the signal was visible. Had he thought it necessary he would have cleaned it.

R. Wilson, lineman, and O. Murphy, lengthman, gave evidence regarding the lockbar at Gartshore; snow prevented the point from being moved right home. It was snowing fairly heavily at 4.30 p.m. Wilson was called to Castlecary down distant on December 6, but found nothing wrong with it. It was said it would not come off; snow, or ice on chain wheels, might have prevented that. He had had cases of distant signals failing to go on at Dullatur West on December 7, owing to frost.

J. Thomson, locomotive shed foreman, Polmont, hearing of the accident, took an engine to Castlecary at 5.10 p.m. Snow was falling heavily. He could see no signals until nearly on them; the light of Castlecary home was visible.

T. Dunn, driver, Polmont, said visibility was very poor, but he could see the lights and positions of the semaphores. Castlecary down distant was definitely "on" when he passed it at 5.40 p.m. His fireman confirmed his evidence.

After discussions with officers of the London & North Eastern Railway, Colonel Mount decided on December 17 to continue his inquiry in private. It was concluded that day at a late hour.

L.N.E.R. Carol Concert

The hundred and ninety-eighth concert of the L.N.E.R. Musical Society took place in the Queen's Hall, London, on Saturday, December 18, when the full symphony orchestra of 100 performers, and the choir of 400 male voices drawn from every rank in the company's service, gave a stirring performance conducted by Mr. Leslie Woodgate of the B.B.C. Before the concert Mr. Robert Illing gave a recital on the grand organ. In view of the recent railway accident in Scotland it was announced that certain changes had been made in the original programme and the concert began with the singing of "The Long Day Closes," during which the audience stood. This was followed by Sullivan's "In Memoriam" overture. The L.N.E.R. Musical Society receives the ready support and assistance of the Chairman, directors, and officers of the L.N.E.R., many of whom were present at the concert, including Mr. William Whitelaw, Chairman, and Sir Ralph Wedgwood, Chief General Manager, and its efforts have been directed not only to giving its members the best possible instruction in the art of music, but to providing enjoyable entertainment of a high quality for its audiences. The orchestra and choir are drawn from London, Cambridge, Doncaster, Grimsby, Ipswich, Lincoln, Norwich, Peterborough, and York. It is announced that the combined forces of the society will give a concert in the Town Hall, Leeds, on Saturday evening, March 19, and in the City Hall, Hull, on Sunday afternoon, March 20.

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RAILWAY AND OTHER MEETINGS

Mexican Railway Co. Ltd.

The half-yearly meeting of the Mexican Railway Co. Ltd. was held at Winchester House, Old Broad Street, London, E.C., on December 22, Mr. Vincent W. Yorke, Chairman of the company, presiding.

The Acting Secretary (Mr. E. C. Webb) read the notice convening the meeting and the auditors' report.

The Chairman, in moving the adoption of the report and accounts, said he was sorry he could find very little of an encouraging nature to say. The prosperity of Mexico and the good gross earnings which it was bringing were continuing, but the increasing demands of labour and the deterioration of the company's equipment by reason of the heavy burden it had to carry were causing constant anxiety. As regards the half-year under review, passenger traffic was highly satisfactory, the receipts showing an increase of over 150,000 pesos and the numbers reaching the high figure of 1,036,000, the highest figure since 1930. Both local and tourist traffic had been good all through the half-year and they had done their best to cater for tourists by co-operating in the organisation of excursions from the United States and the provision of side trips to Orizaba and Cordoba. Express traffic again showed a decline on account of the difficulties in which the company subcontracting for provision of these services found itself. The contract would come up for review at the end of the year, when it was possible that they might find it necessary to take the business back into their own hands.

Goods traffic, with an increase of 1,124,000 pesos had, the Chairman believed, exceeded all previous records in the history of the company. Of this increase as much as 223,000 pesos was due to traffic in fruit and vegetables, and sugar had also brought an increase of 367,000 pesos. Oil and its products also showed an unexpected increase of 88,000 pesos. A remarkable feature of the company's traffic today was that of motorcars, of which they carried no less than 3,808 tons in the past half-year an increase of 1,113 tons as compared with the corresponding half-year of 1936.

As against an increase of 17 per cent. in gross earnings there was unfortunately an increase of 11 per cent. in working expenses to record. Some proportion of this increase was due to the allocation of 10 per cent. of gross receipts to special renewals, and was, therefore, automatic in character; while a further proportion was necessarily due to increased services incidental to increased volume of traffic. The balance of net receipts of £25,842 was very far from satisfactory, though the low rate of exchange of the peso in relation to sterling was partly responsible for the poor result.

As regards the current half-year, gross receipts had averaged about 44,000 pesos per diem, a very high figure for their line. Expenses unfortunately had grown in almost the same proportion, and it was difficult to see how they could do better than break even so far as the results of the whole of the current half-year were concerned.

While all indications pointed to the maintenance of high traffic receipts for some little time to come, unfortunately there seemed little if any prospect of more economical working, which was necessary if they were to earn any profits. The cost to the company of increased wages granted to the lowest paid members of the staff would be approximately £16,700 per annum. What was even more alarming was the prospect of the depression which had set in in the United States extending itself to Mexico. If this came about their position, which was serious enough today, would indeed become precarious. Their only remedy for a fall in traffics would be the dismissal of men on a large scale, and the provision of the Labour Law insisted on the payment of an indemnity of three months' wages to every man dismissed. Such payments it would be quite beyond their financial capacity to meet. Without wishing in any way to indulge in pessimism he thought shareholders ought to be informed of what was clearly a possibility, and one that might at almost any moment eventuate. He was glad to say they had again been successful in cashing nearly all the instalment of coupons on their 40-year bonds which fell due on January 1 next at a reasonably small discount. The proceeds of these bonds, some £16,000, would be brought into account and credited as usual to net revenue in the accounts for the current half-year.

Apart from their efforts to keep down the cost of operation, their chief preoccupation today was the necessity for improving equipment in order to make it adequate for the requirements of the traffic. At the last meeting he had said that as much as £240,000 was required for this purpose, £100,000 of which would be spent on the purchase of four large locomotives. Further study and consideration had led them to modify the programme and they had ordered three smaller locomotives at about £15,000 each, and in this way would cut down the estimate by £55,000.

A cablegram from the General Manager said he was reluctant to forecast improved gross earnings for the next half-year.

The report and accounts were adopted *nem. con.*

The meeting concluded with a vote of thanks to the Chairman and directors, and to the staff in England and Mexico.

RAILWAY AND OTHER REPORTS

East Kent Road Car Co. Ltd.—The net profit for the year ended September 30, 1937, of this company, which is controlled jointly by the Southern Railway Company and Tilling & British Automobile Traction Limited, was £62,398, against £45,686 for the previous year. After meeting the preference dividends and transferring £10,000 (the same) to general reserve, the directors recommend a payment of 8 per cent. (unchanged) on the 350,000 ordinary £1 shares for the year, and a payment at the rate of 8 per cent. per annum from July 1 on 100,000 new ordinary shares, leaving £16,962 to be carried forward, against £7,565 brought in. The arrangements for the acquisition of the Dover and the Isle of Thanet businesses have been satisfactorily carried through.

Associated Equipment Co. Ltd.—The accounts for the year ended September 30 show a rise in trading profits from £333,603 for 1935-36 to £438,444 including a balance of reserve, £8,016, no longer required. After making an allowance of £104,368, against £69,578, for depreciation, the net profit shows expansion from £268,068 to £337,500. The allocation to reserve for taxation is increased from £60,000 to £120,000, and the allocation to general reserve from £85,000 to £100,000. A final dividend of 1s. 1d. a share, free of tax, is again proposed, the total for the year being unchanged at 7½ per cent., free of tax. This is equal to 10 per cent., subject to tax, against 9⅜ per cent. An addition of £5,000 is made to the balance carried forward, increasing it to £260,000.

Turner & Newall Limited.—The directors announce that for the year ended September 30 last the net trading profits amount to £1,333,489, against £1,163,308 for the preceding year. Adding the balance brought forward, £99,069, there is available £1,432,558. National Defence Contribution for the half year ended September 30 calls for £40,000, and the preference and interim ordinary dividends took £300,915. It is proposed to pay on January 22 a final dividend on the issued ordinary stock at 16¼ per cent. (against 13¾ per cent. last year), making a total distribution of 20 per cent. for the year, against 17½ per cent. This final payment requires £865,873, the staff pension fund is to receive £10,000, and the general reserve £100,000, leaving a balance of £115,770 to be carried forward.

NOTES AND NEWS

For Mothers and Children only.—German trains will in future have compartments reserved for the use of mothers travelling with small children.

French National Railways.—The address of the administrative headquarters is: Société Nationale des Chemins de fer, 20, Rue de Rome, Paris, 8.

French Railways Loan Repaid.—M. Bonnet, French Minister of Finance, has announced that the outstanding portion of the loan contracted for the French railways in London a year ago had been repaid from the assets of the Exchange Equalisation Fund.

Imperial Airways Exhibition Train.—The Imperial Airways exhibition train, having travelled nearly 2,000 miles in England, Wales, and Scotland, completed its tour recently in London. During the tour the train stopped at approximately 40 towns and cities and was visited by a total of 135,000 persons.

Stone Railway Sleeper Relics at Welshpool.—During the laying of a water main a few days ago, stone railway sleepers were found 3 ft. below the road surface in Brook Street, Welshpool. It is believed that these are remains of an early line built to connect the Stondart quarry with the Montgomeryshire Canal; the latter was formed under an Act of March 28, 1794.

New Section of Canadian Railway Opened.—On December 1 the first 36-mile section of the Senneterre-Noranda construction was formally opened. It will be remembered that the Noranda line will open up the northern Quebec mining area and give it direct access to the C.N.R. system. Two mixed trains each way daily are being run over the newly-opened section, railhead of which is at Val d'Or.

The East Anglian, L.N.E.R.—From Monday, January 3, the L.N.E.R. East Anglian train will be accelerated in each direction between Norwich and London to perform the journey in 2 hr. 10 min. as compared with 2 hr. 15 min. at present. The revised times will be :—

Norwich Thorpe ...	...	dep.	12.0 noon
Ipswich	...	arr.	12.48 p.m.
		dep.	12.50 ,,
Liverpool Street ...	...	arr.	2.10 ,,
Liverpool Street ...	...	dep.	6.40 p.m.
Ipswich	...	arr.	8.0 ,,
		dep.	8.2 ,,
Norwich	...	arr.	8.50 ,,

Swiss Christmas and New Year Traffic from Abroad.—Special arrangements for dealing with the intensive Christmas and New Year winter sports traffic from abroad include the running of 57 special trains between December 19 and 30, 46 of these entering Switzerland at Basle, namely, 24 from England *via* Boulogne-Laon, 7 from England *via* Ostende, 7 from Belgium, 4 from Holland *via* Cologne, 4 from Paris, and 11 specials from England *via* Boulogne and Laon and crossing the frontier at Delle. The regular sleeping car services from the countries mentioned will be supplemented by some 250 additional cars to cope with the demand for accommodation on trains for the Swiss winter resorts.

All-Steel Cars in Switzerland.—The Swiss Federal Railways are acquiring some all-steel bogie coaches for operation on main-line non-international trains. One type has 48 second class seats on a tare weight of 28 *tonnes*, and the second type has 80 third class seats on a tare weight of 27 *tonnes*.

Cordoba Central Railway.—On December 29 the Argentine Government decreed that the Argentine State Railways shall work the Cordoba Central Railway for a maximum period of four years. The company will be paid £380,000 a year for the first three years, and for the fourth year, if Congress has not by then authorised purchase of the railway, a sum equal to the profits for 1936-37.

Austrian Locomotive Sale.—The Iranian Government Railways have purchased from the Austrian Federal Railways 10 two-cylinder simple 2-10-0 engines built shortly after the war. These locomotives have 23¼ in. by 25 in. cylinders, 51 in. wheels, and a taper boiler with a grate area of 48 sq. ft. and an evaporative heating surface of over 2,200 sq. ft. The engine weight is 80 tons, of which 70 tons is on the coupled wheels.

Possible Compulsory Co-ordination of U.S. Railways.—According to a Reuters message from Washington, Senator Wheeler, discussing the general situation of United States railways recently, said that it might be necessary ultimately for Congress to authorise the Inter-State Commerce Commission to force railway co-ordination and consolidation. This step would be taken with a view to placing the railway system on a sound economic basis, declared the Senator. Legislation to this effect will be discussed after the end of the year, for action by the regular session of Congress.

Simplifying Underground Railway Interchange.—To make it easier for passengers to change from one line to another, the London Passenger Transport Board adopted, about a year ago, the practice of numbering platforms at interchange stations. The principle adopted was to use odd numbers for all southbound and westbound platforms and even numbers for all northbound and eastbound platforms. The numbering of platforms has proved of value, but as members of the staff usually do not know the platform numbers, except at their own stations, they are to be trained to inform passengers not only the station at which they have to change, but also the platform at which they will get their train. The staff will be given pocket diagrams, showing the platform numbers at Oxford Circus, Piccadilly Circus, Charing Cross, Leicester Square, Tottenham Court Road, and Holborn stations.

Long Welded Rails in the Netherland East Indies.—The 3 ft. 6 in.-gauge Deli Railway of Sumatra is now using rails welded into lengths of 40 to 45 metres (131-148 ft.). The rails are welded at a central depot and conveyed to the various parts of the line where they are required on flat trucks. The Netherlands East India State Railways are also welding rails into long lengths, 50m. (164 ft.) being standard. A flash butt welding plant has recently been delivered to the State Railways by the A.E.G.

Operating Reorganisation in Holland.—In connection with the reorganisation of the Netherlands Railways, to come into force on June 1 next, and in particular to speed up passenger services and effect operating economies, Reuters reports that some 150 stations and halts are to be closed. Moreover, a standard timetable is to be introduced as far as possible throughout the country, modelled on that already in force on the Amsterdam—Dordrecht electrified line. This new timetable will be submitted in January to every branch of Dutch transport to enable all forms of transport to be correspondingly reorganised and co-ordinated.

Northern Ireland Pooling.—On December 22, the pooling scheme for traffic receipts of the Northern Ireland railways and the Northern Ireland Road Transport Board was approved by the Transport Appeal Tribunal in the Chancery Court, Belfast. The scheme is to be retrospective from January 1, 1936, and provides for the pooling of receipts among the parties concerned in the following proportions :—

	Per cent.
Northern Ireland Road Transport Board	15·06440
Railway companies	84·93560
	100·00000

The railway companies concerned will divide the railway share in approximately the following proportions :—G.N.R. (I.) 50·02 per cent.; L.M.S.R. (N.C.C.), 23·54 per cent.; B. & C.D., 10·94 per cent.; and Sligo, Leitrim & Northern Counties, 0·43 per cent.

C.N.R. Rolling Stock Deliveries.—Of the rolling stock ordered by the Canadian National Railways in 1937, more than half has now been delivered, and most of the remainder will be delivered before the end of the year. The goods stock already received includes 2,000 steel box cars, 275 refrigerators, 300 gondola cars, and 30 steel sand cars. For the lines in the United States territory 100 gondola cars, 100 refrigerators, and 200 motor-

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car cars have already come to hand. In addition, 15 snow ploughs are still to follow, and 200 motorcar cars were purchased second hand. The C.N.R. is also building 125 refrigerators in its own shops. Of the coaching stock 10 mail and express cars are expected to be delivered during December, as well as 10 baggage cars and the remainder of the 50 first class air-conditioned coaches, of which 35 have already been delivered.

L.N.E.R. Locomotive Table Lighter

A Christmas innovation in the range of L.N.E.R. model locomotives is a table lighter and paperweight, incorporated with a model of the streamlined Pacific No. 4489, *Dominion of Canada*. Previous models have been in the form of paperweights only, and their many admirers who find them useful and decorative accessories for the office or writing desk will welcome the fact that the new one has a rather more domestic application. The lighter is mounted on a base measuring 10¼ in. × 2½ in., with the chromium-plated petrol reservoir and striker at one end. The engine is quite independent of the lighter equipment, with the result that its accuracy of outline is not impaired by any attempt to incorporate the two. It is finished in the correct blue livery, and in combination with the bright finish of the lighter itself forms a substantial ornament. To obtain a light, the striker rod is withdrawn from the petrol drum and struck on the flint attached to the base of the model. The resultant spark ignites an absorbent asbestos wick. All parts of the striker are replaceable. At 10s. 6d. (or 11s. post free) the model is an inexpensive and lasting memento of a trip on the L.N.E.R. Coronation express—or maybe an incentive to make a journey by that train for those who have not already done so. It is obtainable from the Advertising Manager, Southern Area, L.N.E.R., 26, Pancras Road, London, N.W.1.

L.N.E.R. Electrification on Tyneside

The £500,000 scheme approved in 1935 for the electrified lines in the Tyneside area is nearly complete. The whole of the track equipment on the existing electrified lines between Newcastle and the coastal towns of Tynemouth, Whitley Bay, and Cullercoats, together with the Riverside branch loop line, has been modernised, and delivery has now been taken of the new rolling-stock which will maintain the accelerated service. Of the old vehicles, 74 have been scrapped, and 132 new cars have been provided.

From January 3, the new service will be in operation and big reductions will be made in the times for various journeys; the stopping trains from Newcastle to Newcastle *via* Tynemouth will have their time for the round journey reduced from 63 to 53 minutes, whilst the hourly expresses from Newcastle to Tynemouth *via* Backworth will take 24 minutes instead of 30. On the Riverside branch 2 minutes will be cut from the times of the Newcastle to Tynemouth trains and 3 minutes from the times of trains in the reverse direction. As the result of this modernisation the electrified lines radiating from Newcastle will be the most up to date in the country and the new carriages, which are of steel construction, set an entirely new standard in comfort for suburban passengers; they are finished externally in red and cream which has had the effect of brightening their appearance very considerably.

In the meantime, the extension of the electrification from Newcastle to South Shields is proceeding rapidly. The third rail has been electrified and leakage, continuity, bonding, and other tests have taken place in addition to which trials have been run over this branch of 11 miles in length with eight coach electric train sets. It is hoped in the early months of 1938 to introduce the full service between Newcastle and South Shields, which will result in a reduction of the journey time from 33 or 34 minutes to 27 minutes.

Forthcoming Events

Jan. 4 (*Tues.*).—Institute of Transport (Bristol), at University, 6 p.m. Debate.

Institute of Transport (Metropolitan Graduate), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 6 p.m. "Principles Underlying the Issue of Goods Vehicle Licences," by Mr. G. Searle.

Institution of Automobile Engineers (London), at Royal Society of Arts, John Street, W.C.2, 7.45 p.m. "Independent Springing," by Messrs. Dr. F. and G. Lanchester.

Jan. 5 (*Wed.*).—Institution of Heating and Ventilating Engineers (London), at Inst. of Mechanical Engineers, Storey's Gate, S.W.1, 7 p.m. "Air-Conditioning Factors," by Mr. T. Chester.

Royal Society of Arts, John Street, London, W.C.2, 3 p.m. "Railway Wonders of the World," by Mr. Cecil J. Allen.

Jan. 6 (*Thurs.*).—Institute of Metals (Birmingham), at James Watt Inst., 7 p.m. "The Relationship between Mechanical Properties and Liability to Breakdown in Service," by Mr. L. Schuster.

Institution of Electrical Engineers, Savoy Place, London, W.C.2, 6 p.m. "Safeguards against Interruptions of Supply," by Messrs. H. Clothier, B. Leeson, and H. Leyburn.

Institution of Locomotive Engineers (London), at Inst. of Mechanical Engineers, Storey's Gate, S.W.1, 6 p.m. Informal Meeting.

Jan. 7 (*Fri.*).—Institute of Transport (Nottingham Graduate), at Guildhall, 7 p.m. "Operating a Scattered Fleet," by Mr. L. Gage.

Omnibus Society, at Inst. Marine Engineers, The Minories, London, E.C.3, 7 p.m. Annual General Meeting and paper by Mr. Charles E. Lee.

Railway Students' Association (Edinburgh), at Goold Hall, St. Andrew Square, 7.30 p.m. "Recent Trends in Railway Progress Abroad," by Mr. C. E. R. Sherrington.

Jan. 8 (*Sat.*).—Stephenson Locomotive Society (Midlands-Northern), at 4, Bury Old Road, Manchester, 6.30 p.m. "Hunting for Railway Relics," by Mr. B. Baxter.

British and Irish Railway Stocks and Shares

Stocks	Highest 1936	Lowest 1936	Prices Dec. 29, 1937	Prices Rise / Fall
G.W.R.				
Cons. Ord. ...	64¼	45½	63¼	+⅝
5% Con. Prefce. ...	126½	116⅝	117½	—
5% Red.Pref.(1950)	113	108½	110½	—
4% Deb.	119½	110½	109*	+1
4½% Deb.... ...	121	114	109½*	—
4½% Deb.... ...	129	121	116½*	—
5% Deb.	141	134	127½*	+1
2½% Deb.... ...	79⅛	74	68½*	—
5% Rt. Charge ...	136½	130	125½*	—
5% Cons. Guar. ...	135¼	127⅝	126	+½
L.M.S.R.				
Ord.	35⅜	17	29½	+¼
4% Prefce. (1923)	83	52½	70	−½
4% Prefce. ...	92⅝	81	82	—
5% Red.Pref.(1955)	109¼	103¼	104*	—
4% Deb.	111¾	105⁹⁄₁₆	104*	—
5% Red.Deb.(1952)	119⅝	115½	113½	—
4% Guar. ...	106¾	101⅝	101	—
L.N.E.R.				
5% Pref. Ord. ...	14	9	8¼	+¼
Def. Ord.	7¼	4¾	4¼	—
4% First Prefce.	79¼	55¼	67½	—
4% Second Prefce.	31⅞	18¼	26	—
5% Red.Pref.(1955)	100½	77¾	96½	−1
4% First Guar. ...	104½	98¾	95½	—
4% Second Guar.	99	90	89½	+½
3% Deb.	85¾	79	78½*	—
4% Deb.	109¾	104½	103*	+½
5% Red.Deb.(1947)	116¼	110½	110½	—
4½% Sinking Fund Red. Deb.	111½	107½	107*	—
Southern				
Pref. Ord.... ...	98¾	82½	87	—
Def. Ord.	27⅝	20⅛	19¼	+¼
5% Pref.	120¾	118½	114½	—
5% Red.Pref.(1964)	119¾	115¼	113½	—
5% Guar. Prefce.	136	129½	125	—
5% Red.Guar.Pref. (1957)	120	115¾	115	—
4% Deb.	117⅝₁₆	109½	106½	—
5% Deb.	140	134	125½	—
4% Red. Deb. 1962–67	116½	110	105½	—
Belfast & C.D.				
Ord.	9	4½	4½	—
Forth Bridge				
4% Deb.	107	105	100½*	—
4% Guar. ...	107⅝₁₆	104	100½*	—
G. Northern (Ireland)				
Ord.	19½	9¾	5½	+½
G. Southern (Ireland)				
Ord.	63	41	27	—
Prefce.	65	46	35	—
Guar.	97¼	81	70½	—
Deb.	99¾	83¼	82¼	−3¾
L.P.T.B.				
4½% "A" ...	127¾	121	117½	—
5% "A" ...	138¼	133½	127½	—
4½% "T.F.A." ...	111½	108½	106	—
5% "B" ...	131¾	123¾	120½	—
"C"	112½	93	80	—
Mersey				
Ord	40¾	23	23⅛	—
4% Perp. Deb. ...	103	98	97	—
3% Perp. Deb. ...	78	74⅝	75½	—
3% Perp. Prefce.	68⅞	63¼	66½	—

* ex dividend

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 50th Week			Totals to Date		
	1937	1936	Inc. or Dec.	1937	1936	Inc. or Dec.
	£	£	£	£	£	£
L.M.S.R. (6,867 mls.)						
Passenger-train traffic...	494,000	485,000	+ 9,000	25,783,000	24,804,000	+ 979,000
Merchandise, &c. ...	527,000	511,000	+ 16,000	24,969,000	24,173,000	+ 796,000
Coal and coke ...	342,000	309,000	+ 33,000	13,041,000	12,213,000	+ 828,000
Goods-train traffic ...	869,000	820,000	+ 49,000	38,010,000	36,386,000	+ 1,624,000
Total receipts	1,363,000	1,305,000	+ 58,000	63,793,000	61,190,000	+ 2,603,000
L.N.E.R. (6,315 mls.)						
Passenger-train traffic...	319,000	311,000	+ 8,000	16,917,000	16,198,000	+ 719,000
Merchandise, &c. ...	359,000	355,000	+ 4,000	17,207,000	16,592,000	+ 615,000
Coal and coke ...	302,000	289,000	+ 13,000	12,607,000	11,775,000	+ 832,000
Goods-train traffic ...	661,000	644,000	+ 17,000	29,814,000	28,367,000	+ 1,447,000
Total receipts	980,000	955,000	+ 25,000	46,731,000	44,565,000	+ 2,166,000
G.W.R. (3,739½ mls.)						
Passenger-train traffic...	203,000	203,000	—	10,808,000	10,537,000	+ 271,000
Merchandise, &c. ...	221,000	215,000	+ 6,000	10,146,000	9,722,000	+ 424,000
Coal and coke ...	139,000	124,000	+ 15,000	5,676,000	5,100,000	+ 576,000
Goods-train traffic ...	360,000	339,000	+ 21,000	15,822,000	14,822,000	+ 1,000,000
Total receipts	563,000	542,000	+ 21,000	26,630,000	25,359,000	+ 1,271,000
(S.R. 2,147 mls.)						
Passenger-train traffic...	299,000	299,000	—	16,107,000	15,368,000	+ 739,000
Merchandise, &c. ...	65,500	62,500	+ 3,000	3,148,000	3,183,000	— 35,000
Coal and coke ...	42,500	38,500	+ 4,000	1,532,000	1,549,000	— 17,000
Goods-train traffic ...	108,000	101,000	+ 7,000	4,680,000	4,732,000	— 52,000
Total receipts	407,000	400,000	+ 7,000	20,787,000	20,100,000	+ 687,000
Liverpool Overhead ... (6½ mls.)	1,369	1,233	+ 136	65,202	59,817	+ 5,385
Mersey (4½ mls.) ...	4,792	4,729	+ 63	211,133	206,591	+ 4,542
*London Passenger Transport Board ...	595,600	603,500	— 7,900	14,067,800	14,070,400	— 2,600
IRELAND						
†Belfast & C.D. pass. (80 mls.)	1,627	1,536	+ 91	126,205	127,162	— 957
,, ,, goods	488	482	+ 6	24,211	27,092	— 2,881
,, ,, total	2,115	2,018	+ 97	150,416	154,254	— 3,838
Great Northern pass. (543 mls.)	8,850	9,050	— 200	548,850	534,100	+ 14,750
,, ,, goods	9,800	9,300	+ 500	472,550	489,800	— 17,250
,, ,, total	18,650	18,350	+ 300	1,021,400	1,023,900	— 2,500
Great Southern pass. (2,076 mls.)	33,476	34,572	— 1,096	1,813,700	1,795,040	+ 18,660
,, ,, goods	55,954	60,793	— 4,839	2,186,332	2,233,305	— 46,973
,, ,, total	89,430	95,365	— 5,935	4,000,032	4,028,345	— 28,313

* 25th week (before pooling) † 51st week

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 51st Week			Totals to Date		
	1937	1936	Inc. or Dec.	1937	1936	Inc. or Dec.
	£	£	£	£	£	£
L.M.S.R. (6,867 mls.)						
Passenger-train traffic...	685,000	631,000	+ 54,000	26,468,000	25,435,000	+ 1,033,000
Merchandise, &c. ...	429,000	341,000	+ 88,000	25,398,000	24,514,000	+ 884,000
Coal and coke ...	299,000	237,000	+ 62,000	13,340,000	12,450,000	+ 890,000
Goods-train traffic ...	728,000	578,000	+ 150,000	38,738,000	36,964,000	+ 1,774,000
Total receipts	1,413,000	1,209,000	+ 204,000	65,206,000	62,399,000	+ 2,807,000
L.N.E.R. (6,315 mls.)						
Passenger-train traffic...	453,000	417,000	+ 36,000	17,370,000	16,615,000	+ 755,000
Merchandise, &c. ...	292,000	263,000	+ 29,000	17,499,000	16,855,000	+ 644,000
Coal and coke ...	244,000	193,000	+ 51,000	12,851,000	11,968,000	+ 883,000
Goods-train traffic ...	536,000	456,000	+ 80,000	30,350,000	28,823,000	+ 1,527,000
Total receipts	989,000	873,000	+ 116,000	47,720,000	45,438,000	+ 2,282,000
G.W.R. (3,739½ mls.)						
Passenger-train traffic...	321,000	297,000	+ 24,000	11,129,000	10,834,000	+ 295,000
Merchandise, &c. ...	167,000	131,000	+ 36,000	10,313,000	9,853,000	+ 460,000
Coal and coke ...	115,000	88,000	+ 27,000	5,791,000	5,188,000	+ 603,000
Goods-train traffic ...	282,000	219,000	+ 63,000	16,104,000	15,041,000	+ 1,063,000
Total receipts	603,000	516,000	+ 87,000	27,233,000	25,875,000	+ 1,358,000
S.R. (2,147 mls.)						
Passenger-train traffic...	418,000	388,000	+ 30,000	16,525,000	15,756,000	+ 769,000
Merchandise, &c. ...	53,000	42,000	+ 11,000	3,201,000	3,225,000	— 24,000
Coal and coke ...	38,000	28,000	+ 10,000	1,570,000	1,577,000	— 7,000
Goods-train traffic ...	91,000	70,000	+ 21,000	4,771,000	4,802,000	— 31,000
Total receipts	509,000	458,000	+ 51,000	21,296,000	20,558,000	+ 738,000
Liverpool Overhead ... (6½ mls.)	1,350	998	+ 352	66,552	60,815	+ 5,737
Mersey (4½ mls.) ...	4,681	4,559	+ 122	215,814	211,150	+ 4,664
*London Passenger Transport Board ...	554,300	535,800	+ 18,500	14,622,100	14,606,200	+ 15,900
IRELAND						
†Belfast & C.D. pass. (80 mls.)	1,982	1,907	+ 75	128,187	129,069	— 882
,, ,, goods	430	523	— 93	24,641	27,615	— 2,974
,, ,, total	2,412	2,430	— 18	152,828	156,684	— 3,856
Great Northern pass. (543 mls.)	15,050	14,650	+ 400	563,900	548,750	+ 15,150
,, ,, goods	8,900	7,100	+ 1,800	481,450	496,900	— 15,450
,, ,, total	23,950	21,750	+ 2,200	1,045,350	1,045,650	— 300
Great Southern pass. (2,076 mls.)	51,199	49,244	+ 1,955	1,864,899	1,844,284	+ 20,615
,, ,, goods	45,024	39,338	+ 5,686	2,231,356	2,272,643	— 41,287
,, ,, total	96,223	88,582	+ 7,641	4,096,255	4,116,927	— 20,672

Christmas Day, 1937 ; Christmas Day and Boxing Day, 1936. * 26th week. † 52nd week

CONTRACTS AND TENDERS

£2,000,000 L.M.S.R. Permanent Way Programme

The L.M.S.R. announces authorisation of a 1938 permanent way renewal programme which will involve an expenditure of £2,000,000. The work will involve the complete relaying of 605 miles of track (including points and crossings) with new materials throughout; another 80 miles with new sleepers; and 36 miles with new rails. Further, 57 miles of line will be renewed with partly new and partly used but serviceable material, and 5½ miles of new conductor rails will be renewed in the electrified section. British steel manufacturers will benefit from this programme by the placing of orders for over 95,000 tons of steel rails, apart from other material. The following items are involved in this programme: 65,000 chairs, 258,250 fishplates, 1,118,000 steel keys, 2,122,000 wooden keys, 9,363,000 chair screws and ferrules, 1,365,600 new sleepers, 1,190,750 ft. timber for points and crossings, and 256,000 tons of stone ballast.

The London Passenger Transport Board has placed a contract for the widening of the bridge over Northolt Road, Eastcote, and the construction of the substructure of the new Eastcote station. The widening of the bridge is being undertaken on behalf of the Ruislip-Northwood Urban District Council. A contract was let in October for the new station, a modern brick building that will be erected over the tracks. The whole work will cost approximately £30,000. Prestige & Co. Ltd. is the contractor for the station and bridge and John Bills has received the contract for the widening and sub-structure.

The Bengal-Nagpur Railway Administration has placed the following orders:—

Steel Company of Scotland; 650 steel locomotive tyres.

English Steel Corporation; 600 steel locomotive tyres.

Steel, Peech & Tozer Limited; 620 steel locomotive tyres.

Caprotti Valve Gears Limited; quantity of Caprotti valve gear spares.

The Vulcan Foundry Limited has received an order from the Buenos Ayres Great Southern Railway for 20 built-up locomotive crank axles.

Usines & Boulloneries de Mariemont, through H. J. Skelton & Co. Ltd., has received orders from the Gondal Railway Administration for 42 tons of dogspikes to be supplied to the inspection of Messrs. Robert White & Partners.

The Bombay, Baroda & Central India Railway Administration has placed orders, to the inspection of Messrs. Rendel, Palmer & Tritton, with Bochumer Verein A.G. for 200 steel carriage and wagon tyres; and with H. J. Skelton & Co. Ltd., as agent for the Royal Hungarian Iron, Steel & Machine Works, for 280 pairs of carriage and wagon wheels and axles.

The Gloucester Railway Carriage & Wagon Co. Ltd. has received orders from the Crown Agents for the Colonies for 40 bogie covered goods wagons and 10 bogie motorcar trucks required for the Federated Malay States Railways.

G.W.R. New Works

The G.W.R. announces the following works to be undertaken:—

Cardiff.—The engine hoist now in use at Cathays locomotive depot is to be replaced by one electrically worked. The stores at this depot are also to be concentrated.

Ebbw Vale Branch.—In connection with the establishment of Richard Thomas & Company's new steelworks at Ebbw Vale, extensive siding accommodation and improved running facilities are to be provided. The steelworks will extend for approximately a mile and three-quarters along the branch, and three nests of sidings are to be provided to deal with approximately 2,000 wagons a day. In addition, running loops are to be provided between Graig Fawr and Cwm Colliery South and between Cwm and Waun Llwyd Colliery South.

Gwinear Road.—The lighting at this station is to be converted from oil to electric.

Kemble.—The layout of the sidings is to be improved to admit of the free passage of modern types of locomotives.

Llanelly.—Consequent upon increased traffic in this district due to the revival of the steel trade, the layout at Llandilo Junction is to be improved.

Neath.—The layout of the sidings at Neath Junction is to be altered, and a loop line provided at Cardonnel, to facilitate the handling of freight trains from the Vale of Neath and Neath & Brecon sections.

Watchet.—An additional siding is to be provided to make provision for increased traffics now being received through the harbour.

The Vulcan Foundry Co. Ltd. has received orders from the Madras & Southern Mahratta Railway Administration, to the inspection of Messrs. Rendel, Palmer & Tritton, for seven boilers for "AS" class 4-6-0 type broad-gauge locomotives, and seven boilers for "GS" class 4-8-0 type metre-gauge locomotives.

The Madras & Southern Mahratta Railway Administration has also placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton:—

Bochumer Verein A.G.; 746 locomotive, carriage, and wagon tyres.

Nicholson & Fieldsen Limited; 600 helical springs.

Soc. Anon. des Boulonneries de Liége et de la Blanchisserie; 100,000 dogspikes.

Soc. Commerciale d'Ougrée; 57,000 bearing plates.

Stahlunion-Export G.m.b.H.; 60,000 fish-bolts.

Rootes Limited has recently supplied to the London Passenger Transport Board a fleet of eleven Hillman Minx saloons.

Leyland Motors Limited has received orders from the London Passenger Transport Board for the chassis and body-work for 100 trolleybuses, required for the Ilford to West Ham, Barnet to Holborn, and Enfield to Tottenham Court Road routes. The value of this contract is approximately £200,000.

Leyland Motors Limited has also received the following orders from railway and railway-associated road transport operators:—

Londonderry and Lough Swilly Railway; one Lion passenger vehicle.

Southdown Motor Services Limited; five Cheetah and five oil-engined Tiger passenger vehicles.

Soviet Orders Placed in the United Kingdom

Orders placed in the United Kingdom by Soviet trading organisations in October amounted to £1,392,544 as compared with £1,114,560 in October, 1936. In the first ten months of this year the value of the orders placed was £18,364,479 as compared with £8,799,505 in the corresponding period of 1936. The following table shows for engineering and allied equipment and materials, the orders placed and purchases made in the United Kingdom in October and in the first ten months of this year as compared with the corresponding period in 1936:—

	Oct., 1936	Oct., 1937	Jan.-Oct., 1936	Jan.-Oct., 1937
	£	£	£	£
Machinery and equipment ..	—1,636	912,054	347,262	7,955,557
Ferrous alloys and steel ..	214,069	—	550,936	34,564
Non-ferrous ores ..	—	—	—	225,849
Non-ferrous metals ..	368,451	23,902	2,923,077	5,142,680
Rubber ..	222,620	21,440	1,847,463	1,997,831

As is seen from the above figures, orders for machinery have greatly increased and amounted this year to approximately eight million pounds as compared with £347,226 in 1936. The purchases of non-ferrous metals have increased by nearly eighty per cent. The orders for other goods have shown but slight changes with the exception of ferrous alloys, and steel, the orders for which have been drastically reduced.

With reference to the call for tenders (No. 1446) by the South African Railways & Harbours Administration for the supply of railcars, the closing date for receipt of tender has been postponed until February 14, 1938.

The Argentine State Railways Administration is calling for tenders, to be presented in Argentina by January 24, for the supply and delivery of quantities of steel tyres and axles for locomotives, tenders, coaches, and trucks. Firms desirous of offering tyres and axles of United Kingdom manufacture can obtain further details from the Department of Overseas Trade.

OFFICIAL NOTICES

Crown Agents for the Colonies

COLONIAL GOVERNMENT APPOINTMENTS

APPLICATIONS from qualified candidates are invited for the following post :—

ASSISTANT CHIEF MECHANICAL ENGINEER

required for the Federated Malay States Railways for 3 years with possible permanency. Salary $850 a month (the Government rate of exchange is now 2s. 4d. to the dollar). Free passages, and if married, for wife and children not exceeding 4 persons. Liberal leave on full salary. Candidates, not more than 35 years of age, must have served an apprenticeship or pupilage in the Locomotive Department of a British Railway or with a firm of Locomotive Builders. They should have had a sound engineering training and experience in works management and in modern production methods. Some electrical training would be an advantage. They should be Corporate Members of either the Institution of Civil Engineers or the Institution of Mechanical Engineers, or possess an equivalent qualification.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/5639.

Royal State Railways of Siam

NOTICE.

SEALED Tenders for the supply of Bogies and Underframes of 20 Carriages will be received by the Superintendent of Stores, Royal State Railways of Siam, Bangkok, Siam, up to 14 o'clock on the 14th March, 1938, at which hour and date they will be publicly opened in the Superintendent of Stores' Office.

Blank Tender Forms are obtainable from MESSRS. SANDBERG, 40, Grosvenor Gardens, London, S.W.1, and 25, Broadway, New York City, at the price of £3 0s. 0d. and $15.00 per set respectively.

THE ADMINISTRATION,
ROYAL STATE RAILWAYS OF SIAM

Bengal-Nagpur Railway Company Limited

THE Directors are prepared to receive Tenders for :—

2,530 STEEL CARRIAGE AND WAGON TYRES.

Specification and Form of Tender can be obtained at the Company's Offices, 132, Gresham House, Old Broad Street, London, E.C.2, on or after 22nd December, 1937.

A fee of 20s. will be charged for each copy of the Specification, which is *NOT* returnable.

Tenders must be submitted not later than Noon on 7th January, 1938.

The Directors do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,
T. R. WYNNE,
Managing Director.

Waterloo & City Improvements

Following a question in Parliament (reported in our issue of December 3) to the Minister of Transport regarding inadequacy of facilities on the Waterloo & City line of the Southern Railway, an important statement by the Chairman of the Southern Railway was made on December 20 to a deputation representing the Waterloo & City Railway Protest Committee. Those present at the meeting were :—

Southern Railway: Mr. Robert Holland-Martin (Chairman), Mr. Eric Gore-Brown (Deputy-Chairman), Mr. Gilbert S. Szlumper (General Manager), Mr. E. J. Missenden (Traffic Manager), Mr. G. Ellson (Chief Engineer), Mr. Herbert Jones (Electrical Engineer), Major L. F. S. Dawes (Secretary).

Waterloo & City Railway Protest Committee: Alderman Rampton (Mayor of Surbiton and Chairman), Mr. D. Foster Hollins, Mr. D. Hollins, Mr. W. D. Hooper, Mr. R. H. Wright (Town Clerk of Surbiton).

The deputation represented fully the grievances of the travellers on the Waterloo & City Railway, stressing especially the condition of the rolling-stock, the long waits during rush hours, particularly at Waterloo in the mornings, and the objections to the long ramp at the City end up and down which all passengers had to walk. They asked the Chairman to give them some information of the intentions of the company with regard to improving matters.

The Chairman first stated the difficulties, as follows : The railway was one of the first tube railways ; it was built in 1898 and its construction lacked the benefit of later experience. The original stock was still being used, and in its present condition the line was worked to its maximum capacity. The company realised that the public generally had been very patient in the matter, in which there had been cause for complaint ; he stated that the directors of the Southern Railway had for some considerable time been concerned at the conditions, and had, after consideration last week at a board meeting, sanctioned certain work to be put in hand as follows :—

(*a*) Completely new rolling-stock, which would practically double the existing carrying capacity. This would be designed to give more standing room, but slightly less seating capacity, and have larger doors, and should eliminate queues during peak hours.

(*b*) Renewal of signalling arrangements, cables and switchgear, and the placing of the conductor rail in a new position. These would also slightly add to the capacity of the line.

(*c*) Certain lesser improvements, such as welding of rail joints ; noise-absorbing shields and " pinch wire " emergency communication.

(*d*) Arrangements for issue and collection of tickets at terminal points instead of in trains.

The Chairman stated that these proposals would be put in hand at once, and though, owing to present difficulties of production, he would give no promise, the work would be completed, he hoped, in two years. They would, he stated, do much to improve matters, and would altogether eliminate waiting at terminal points during rush hours, but in regard to escalators at the Bank, he could at present give no promises. This matter was originally in hand in 1931 and Parliamentary powers were then obtained by the Southern Railway to construct a reversible double escalator, but the formation of the London Passenger Transport Board just afterwards had made it necessary to review the question in its broader aspect with a view to a possible subway connection at the Bank with the Central London Railway, and the attainment of other advantages to the tube railways at the Bank, as well as the Waterloo & City Railway, by installing escalators at a point most advantageous to the whole layout at the Bank. It was hoped that a report on this matter would be received shortly, when it would have the earnest and immediate consideration of the directors of the Southern Railway, but it might be difficult to get Parliamentary powers for the larger scheme, in which case the original scheme would have to be reverted to. The Chairman undertook that any reasonable steps to improve conditions on the Waterloo & City would be taken by the Southern Railway Company.

After further discussion in which it was stated that it was not possible to run trains from Waterloo Junction to Cannon Street to relieve congestion, the Chairman stated that the installation of certain strap-hanging facilities in order to distribute the passengers more comfortably in the present stock would be undertaken, although the coaches were at present loaded to their safety maximum and could take no more passengers.

The deputation thanked the Chairman for the sympathetic way in which he had received them and for so fully explaining the intentions of the company. With the amelioration of the ramp difficulty at the Bank station and the other agreed improvements, they realised that this would modernise the travel conditions of the line.

The Chairman of the protest committee was invited to get into touch with the company from time to time, when he would be informed of the progress of the arrangements. He also offered help should it be necessary, from those of the committee who were Members of Parliament, for which the Chairman of the railway company thanked him.

INTERNATIONAL ENGINEERING CONGRESS, GLASGOW, 1938.—Various engineering societies have decided to co-operate in organising an international engineering congress in Glasgow next year, to be held during the progress of the Empire Exhibition, Glasgow, thus taking advantage of the attendance there of the large numbers of engineers from distant parts who will doubtless then be in the city. A representative general committee has been formed, with the Rt. Hon. Lord Weir, P.C., G.C.B., as President. The congress will be held from June 21 to 24 inclusive, and during these dates an interesting provisional programme has been arranged. Membership of the congress will be open to members of any recognised technical society. A fee of £2 5s. will be payable by every member and £1 15s. for an accompanying lady. The Honorary General Secretary is Mr. P. W. Thomas, of 39, Elmbank Crescent, Glasgow, C.2.

XUM

Railway Share Market

Sufficient time has not elapsed for the stock and share markets to shake off holiday influences, and pending a return of more active conditions, prices in nearly all sections of the Stock Exchange have moved against holders this week. Very little selling was reported, however, but sentiment was affected mainly by the absence of demand and by the weakness of New York markets.

Home Railway junior stocks have made lower prices. This is a reflection of the general market trend and does not indicate any less favourable anticipations with regard to dividend payments for the past year. L.M.S.R. ordinary has gone back to 29¼ at the time of writing, although the market is continuing to budget for a dividend of at least 1½ per cent., while in many quarters 2 per cent. is considered probable, according to current views. The 4 per cent. preference was dull at 82, as was the 4 per cent. 1923 preference at 70. Great Western at 63¼ was relatively steady, but has not kept best prices, despite anticipations of a 4 per cent. dividend and the favourable potential yield offered on this basis. L.N.E.R. second preference at 26 has failed to respond to market hopes that the dividend may be stepped up to 1½ per cent., and the preferred and deferred stocks were also lower on balance, as was the first preference at 67½. The first preference ranks, of course, for a 4 per cent. dividend, and as an interim of 1 per cent. has been paid the current price may be regarded as carrying the balance of 3 per cent. Southern deferred at 19¼ was inclined to improve on the suggestion made in some quarters that a dividend of 1¼ per cent. is possible—but not more than 1 per cent. is generally considered likely. The preferred at 86¾ received rather more attention earlier in the week. Movements in Argentine and most other foreign railway stocks were against holders, there being a lowering of prices by dealers, pending a return of more active market conditions. News regarding the Argentine wheat crop appears quite satisfactory, and if more than a short view be taken the preference and ordinary stocks of B.A. Gt. Southern, Central Argentine and B.A. Western are probably very moderately valued at current prices. Similar remarks would appear to apply to the debentures of these companies, which offer an average yield of around 5½ per cent. Cordoba Central 4½ per cent. debentures were fairly steady at 44. Elsewhere, San Paulo ordinary at 66 lost part of its recent improvement. Canadian Pacific ordinary and preference moved in sympathy with the reaction in American railway stocks.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1936-37	Week Ending	Traffics for Week: Total this year	Traffics for Week: Inc. or Dec. compared with 1936	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1936	Prices: Lowest 1936	Prices: Dec. 29, 1937	Prices: Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	26.12.37	20,260	+ 2,780	52	875,820	735,530	+ 140,290	Ord. Stk.	25	15¼	13½	Nil
	Argentine North Eastern	753	25.12.37	8,809	+ 1,489	26	249,916	239,925	+ 9,991	,,	12	2	5½	Nil
	Argentine Transandine	—	—	—	—	—	—	—	—	A. Deb.	54	45	80§	5
	Bolivar	174	Nov., 1937	2,600	— 2,400	48	55,650	68,600	— 12,950	6 p.c. Deb.	9	5	8½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	16	11½	11½	45/16
	Buenos Ayres & Pacific	2,806	25.12.37	88,834	— 11,352	26	2,051,615	2,020,638	+ 30,977	Ord. Stk.	17½	6	7	Nil
	Buenos Ayres Central	190	4.12.37	$101,100	— $58,900	23	$3,056,700	$3,251,600	— $194,900	Mt. Deb.	31½	11	22½	Nil
	Buenos Ayres Gt. Southern	5,084	25.12.37	149,007	+ 1,426	26	3,248,821	3,014,659	+ 234,162	Ord. Stk.	31¾	13¾	18	Nil
	Buenos Ayres Western	1,930	25.12.37	44,355	— 13,151	26	1,181,887	1,107,399	+ 74,488	,,	29¾	11	13½	Nil
	Central Argentine	3,700	25.12.37	132,115	— 23,549	26	3,296,492	3,633,402	— 336,910	,,	32932	8¾	13½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	21	4½	7	Nil
	Cent. Uruguay of M. Video	980	18.12.37	19,292	+ 493	25	411,266	411,705	— 439	Ord. Stk.	7¾	3	2¼	Nil
	Cordoba Central	1,218	25.12.37	23,330	— 5,020	26	797,300	840,000	— 42,700	Ord. Inc.	5	1	2¼	Nil
	Costa Rica	188	Oct., 1937	22,580	+ 3,354	18	101,026	71,989	+ 29,037	Stk.	36½	32	28½	7
	Dorada	70	Nov., 1937	15,800	+ 1,000	48	170,100	156,500	+ 13,600	1 Mt. Db.	107	101½	107½§	59/16
	Entre Rios	810	25.12.37	15,062	+ 2,060	26	352,019	333,100	+ 18,919	Ord. Stk.	17	6	6½	Nil
	Great Western of Brazil	1,092	25.12.37	13,300	+ 3,600	52	429,400	426,100	+ 3,300	Ord. Sh.	1/2	3/16	3/8	Nil
	International of Cl. Amer.	794	Oct., 1937	$443,577	+ $149,452	44	$4,870,123	$4,223,770	+ $646,353	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	1/2	-/6	1/2	Nil
	La Guaira & Caracas	22¼	Nov., 1937	4,865	+ 240	48	56,685	50,475	+ 6,210	Stk.	9	3	8½	Nil
	Leopoldina	1,918	25.12.37	15,095	— 9,168	52	1,184,326	1,031,062	+ 153,264	Ord. Stk.	10½	3½	3½	Nil
	Mexican	483	21.12.37	$283,200	— $35,900	25	$7,254,000	$6,660,100	+ $593,900	,,	1¼	1/4	1/2	Nil
	Midland of Uruguay	319	Nov., 1937	9,439	+ 421	22	42,148	41,315	+ 832	,,	1½	1/8	1/2	Nil
	Nitrate	384	15.12.37	5,249	+ 2,487	50	144,762	112,306	+ 32,456	Ord. Sh.	63/6	41/9	2⅝	Nil
	Paraguay Central	274	25.12.37	$2,738,000	— $198,000	26	$84,331,000	$67,219,000	+ $17,112,000	Pr. Li. Stk.	85	71	77½§	7/8
	Peruvian Corporation	1,059	Nov., 1937	79,177	+ 8,955	22	427,128	409,273	+ 17,855	Pref.	15	9	5	Nil
	Salvador	100	18.12.37	¢27,850	— ¢4,500	25	¢334,375	¢326,858	+ ¢7,517	Pr. Li. Db.	18	16	22½	Nil
	San Paulo	153½	19.12.37	28,760	— 3,999	51	1,650,061	1,506,246	+ 143,815	Ord. Stk.	86	46½	66	7/16
	Taltal	160	Nov., 1937	3,465	— 925	22	16,350	16,810	— 460	Ord. Sh.	11532	14/-	3¼	13516
	United of Havana	1,353	25.12.37	17,240	— 2,257	26	424,574	411,725	+ 12,849	Ord. Stk.	3¼	1	2	Nil
	Uruguay Northern	73	Nov., 1937	921	— 362	22	4,320	5,055	— 735	Deb. Stk.	5	3	3½	Nil
Canada	Canadian National	23,803	21.12.37	731,538	— 19,397	51	38,635,463	36,100,573	+ 2,534,890	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	— 4 p.c.	Perp. Dbs.	76	51	64½	6516
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	104¾	99¾	99½	4
	Canadian Pacific	17,228	21.12.37	564,000	— 24,600	51	28,245,400	26,958,200	+ 1,287,200	Ord. Stk.	16¾	10116	7½	Nil
India†	Assam Bengal	1,329	30.11.37	39,435	— 4,026	34	908,084	867,699	+ 40,365	Ord. Stk.	87¾	82¼	78½§	31516
	Barsi Light	202	20.11.37	8,205	+ 5,775	32	84,517	70,575	+ 13,942	Ord. Sh.	77½	65½	54	9¼
	Bengal & North Western	2,107	10.12.37	73,176	— 7,949	11	514,401	526,934	— 12,533	Ord. Stk.	319	292⅝	309	51116
	Bengal Dooars & Extension	161	10.12.37	3,923	— 45	36	104,988	93,884	+ 11,104	,,	127½	118	86¼	7
	Bengal-Nagpur	3,268	10.12.37	183,825	— 16,564	36	4,738,999	4,204,346	+ 534,653	,,	104	100¼	90½	4716
	Bombay, Baroda & Cl. India	3,072	20.12.37	253,050	— 25,275	38	6,260,175	5,964,150	+ 296,025	,,	114	110½	111½	5⅜
	Madras & Southern Mahratta	3,229	30.11.37	149,400	— 7,645	34	3,613,623	3,559,043	+ 54,580	,,	116½	108½	107½	71316
	Rohilkund & Kumaon	572	10.12.37	13,851	— 1,744	11	86,608	90,294	— 3,686	,,	311	286	307	51116
	South Indian	2,531§	30.11.37	103,783	+ 4,456	34	2,778,934	2,671,149	+ 107,785	,,	107½	10256	100½§	4¼
Various	Beira-Umtali	204	Oct., 1937	95,714	+ 27,209	5	95,714	68,505	+ 27,209	—	—	—	—	—
	Egyptian Delta	620	10.12.37	7,900	— 311	36	183,881	174,138	+ 9,743	Prf. Sh.	21¼	15⅜	11¼	Nil
	Great Southern of Spain	—	—	—	—	—	—	—	—	Inc. Deb.	11/2	1/8	3½	il
	Kenya & Uganda	1,625	Nov., 1937	210,808	+ 19,924	48	2,514,047	2,321,904	+ 192,143	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	50½	37	45½	85¼
	Midland of W. Australia	277	Oct., 1937	16,749	— 471	18	54,675	54,054	+ 621	Inc. Deb.	97	93½	93½§	4¼
	Nigerian	1,900	13.11.37	60,268	— 16,860	33	1,544,289	1,165,413	+ 378,876	—	—	—	—	—
	Rhodesia	2,451	Oct., 1937	467,363	+ 112,132	5	467,363	355,231	+ 112,132	—	—	—	—	—
	South Africa	13,263	4.12.37	708,661	+ 30,147	36	22,995,776	21,608,178	+ 1,387,598	—	—	—	—	—
	Victoria	4,774	June, 1937	793,223	+ 89,530	52	10,135,291	9,689,925	+ 445,366	—	—	—	—	—
	Zafra & Huelva	112	Sept., 1937	15,307	+ 8,641	39	117,046	65,948	+ 51,098	—	—	—	—	—

Note.—Yields are based on the approximate current prices and are within a fraction of 1/16.

† Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend. Salvador and Paraguay Central receipts are in currency.

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements are based on the current rates of exchange and not on the par value.